

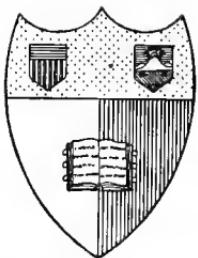
# LABOUR, FINANCE, AND THE WAR

EDITED BY

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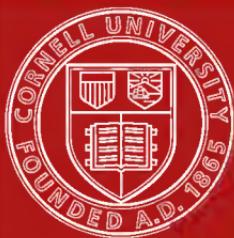
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# LABOUR, FINANCE, AND THE WAR

BEING THE RESULTS OF INQUIRIES, ARRANGED  
BY THE SECTION OF ECONOMIC SCIENCE AND  
STATISTICS OF THE BRITISH ASSOCIATION FOR  
THE ADVANCEMENT OF SCIENCE, DURING THE  
YEARS 1915 AND 1916

EDITED AND WITH A PREFACE BY  
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## PREFACE

THIS book is the result of organised co-operative effort. The work of last year, published under the title of *Credit, Industry, and the War*, was so well received that it was determined to proceed with another volume. Three committees of investigation were established, and the British Association most generously furnished funds to continue the work.

The investigations which have been completed should prove helpful to those who will be responsible for our economic reconstruction when peace is restored. The financial position and its possibilities have been examined and explained by experts, and Labour difficulties, both those which have caused anxiety for years past and those brought into existence by war conditions, have been discussed with those in practical touch with them. Thus it is hoped that the recommendations here put forward may not only arouse interest but lead to some definite results.

The fear undoubtedly exists in industrial circles that peace abroad may bring us face to face with serious troubles at home. If Capital and Labour should enter upon a period of strife the seriousness of the consequences can hardly be exaggerated. Thus an attempt has been made to construct a forecast of the commercial future. This forecast is the result of many discussions with representatives of varied interests, and it is printed in the hope that it may stimulate others to give thought to the subject. The knowledge and experience of business men may lead them to modify or develop some of the points advanced. But if it induce leaders in the commercial world to make a definite effort to look ahead with a view to discussing their conclusions with all other interested parties, a great thing will have been achieved. One is convinced that unless the leaders on both sides of industry take up a more statesmanlike attitude there is more than the possibility of a disastrous struggle. Common sense, frankness, and a disposition to give and take are required from both sides. If these be practised, and our trade organisation be developed on the lines suggested in the following pages, there would be little need to feel anxious as to our industrial and commercial future.

The chapter on replacement of men by women contains many

surprises, and deserves careful attention. A comparatively small number of women have replaced men, but the introduction of new methods, especially new machinery, and improvements in works organisation, together with the cheerful response of all to the call to make great efforts, have resulted in enormously increasing the production not only of munitions, but of all kinds of war equipment. Nor has the national effort stopped there, as can clearly be seen by referring to the figures of our export trade. In a word, the nation has bestirred itself in every sphere. When peace comes this awakening must be made even more thorough. The comparatively sleepy days of the Victorian Age are at an end: the call is to effort, and still more of it. Two years ago no one realised what the nation could accomplish; to-day all the world is aware that the British Empire cannot be lightly challenged either by sea, by land, in the air, or in the workshop.

As President of the Section, and Editor of this volume, I have to thank all those who have so disinterestedly contributed to the work. Professor Scott has been Chairman of two committees, and everything that he has touched has responded to the master-hand. In the chapter on the effects of the war on credit, currency, and finance his influence and thought are continuously in evidence. Mr. J. E. Allen, the Secretary of this Committee, most ably supported his Chairman: the result speaks for itself. That these two officials were able to obtain the co-operation of so many busy men—bankers, financiers, and economists—is a proof that both practical and theoretical men realise the value of the work undertaken in this investigation.

The work on the replacement of men by women was carried through by local committees, working under considerable difficulties. The results were co-ordinated by the Secretary—Mr. James Cunnison—under the guidance of Professor Scott. On the whole the local investigations were most thoroughly carried out. Special thanks are due to Miss Mellor and Miss Ashley, Messrs. H. E. R. and J. E. Highton, and Mr. Halliday.

The committee over which I had the honour to preside included well-known representatives of both Capital and Labour, as well as Economists. It was very striking to find not only how all realised the seriousness of the interests at stake, but that the points on which they were in agreement were infinitely more important than those on which there was some difference of opinion. All agreed as to the

need for supplying more information when industrial decisions have to be made, all regretted that in the past a want of frankness has so frequently been the cause of failure to find a solution. The attitude of all, supplemented by that of other representative men interviewed during the course of the inquiry, strengthens the hope that we may be on the threshold of a new era. If only the attitude taken up under the stress of war be maintained for a few years a peaceful revolution will result, and we shall wonder why we did not take the obvious steps sooner. My special thanks are due to Mr. Howard Heaton for help in incorporating suggestions in the final revision of the chapter.

The chapter on Land Settlement, for which we are indebted to Mr. Christopher Turnor, teems with wit and worth. His readiness to place his knowledge and experience before the Association merits a very special word of thanks.

When the forces necessitated by the war are disbanded the country will have a unique opportunity for tackling the subject of land settlement. One landowner, at all events, has realised his responsibility, and it is to be hoped that the example set by the Duke of Sutherland will be widely followed. The Government appears to be aware of the need for action, but the Bill now before Parliament requires developing if a really satisfactory scheme is to result.

It cannot be too strongly impressed upon the nation that our countryside has been lamentably neglected. This has frequently been proclaimed, but never before has there been such a possibility for successfully coping with the repopulation of our rural districts. Thousands of men will at the moment of demobilisation be willing to enter upon the new career, and this moment must not be allowed to pass without the offer being made. Such an opportunity is not likely to recur during this generation. There will be a demand for healthy living conditions, and though it may require much courage and more cash to comply with it, the findings of our Currency Committee and the optimism of the Chancellor of the Exchequer as to the effects of the war on the national wealth show that if the nation has the will, the means exist for carrying that will into effect.

A. W. KIRKALDY.

THE UNIVERSITY,  
BIRMINGHAM.  
15th August, 1916.



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# LABOUR, FINANCE, AND THE WAR

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## CHAPTER I

### SOME THOUGHTS ON RECONSTRUCTION AFTER THE WAR

WE have been at war for two years, and the war has been waged more strenuously than any that human history records. It used to be said that a great European war, under modern conditions, could not last more than six months; but this prediction, like so many other preconceptions, has been falsified by a world calamity that to the great mass of mankind was entirely unforeseen.

In every sphere, this great war has worked, and will yet work, great changes; but in the economic sphere the effects that can already be noted far exceed those in any other.

Up to the present, "the man in the street" will tell you that the war has cost over £2,000,000,000. In mentioning that sum, he probably thinks of sacks of sovereigns, a printing press feverishly turning out Treasury notes, and the various devices with which he is familiar for making currency or credit. But it would probably sound strange to him to hear that the number of sovereigns in the country is, if anything, greater than when the war commenced, and that currency generally has been enormously increased during the past twenty-four months, for it is not currency that has been consumed. The same "man in the street," especially if he live in a munitions district, will discover that there is money in plenty in circulation; that the people all look well-to-do, and are living as they seldom or never have before; and he may conclude that war is, after all, not such a bad thing: at any rate, it brings prosperity.

What is the truth? When we say that the war has cost £2,000,000,000, we mean that we have consumed that amount of commodities and services; that we have diverted capital and labour into new channels of production, but that these channels,

unlike those connected with a good scheme of irrigation—which may make the wilderness to blossom like the rose—have emptied themselves in the desert, and the runnels are now dry and worthless. To put it plainly, the warring Powers have, some entirely, others more or less partially, turned their attention from profitable production—the output of wealth, the exchange or use of which will produce new wealth—to the production of instruments of destruction. When these instruments are utilised, they not only consume themselves and leave practically nothing remaining, but they carry out a work of destruction which entails the loss of other accumulations or possibilities of wealth. Nor is the consumption of the instruments and munitions of war the sole or chief material loss to the combatants. The men handling those weapons have to be trained and transported to the field of action, fed during the period of their service, tended when sick or wounded, and clothed and housed in some sort. All these operations consume a quantity of food, clothing, and other materials of various descriptions, and there is absolutely nothing tangible to show for this expenditure.

To take our own case, 5,000,000 men trained to industry, helping to carry on the business and trade of this country, would consume almost as much food and clothing, and other materials, as the men in the field and on the sea; but as a return for that consumption, there is more than corresponding production of useful commodities, machines, ships, and railway stock which, in turn, assist in the work of developing the natural resources of the world, or of directly taking part in the work of further production. Thus the position is that for two years we have been consuming our wealth, and to that extent must remain the poorer and be short of many of the goods and services we used to consider necessities of life, until we have, by renewed efforts, and a return to the industries and commerce of peace, taken measures to restore those useful things which have been consumed.

When the war ends, it will be incumbent on us all to redouble our activities; increase the productivity of mill, factory, and field: for so long as there is a deficiency in excess of what we were accustomed to, so long must some of us, and especially the poorer members of the community, feel the pinch occasioned by this devastating war.

But it may be asked: How are we to increase our productivity? The war, in spite of the suffering and loss occasioned, has not been all loss. As a nation—nay, as an Empire—we have found ourselves; but this thought, if developed, would lead us into spheres foreign to the work of this Section. We have taken measures which must result in improving the physique of our race. Of the many thousands of men who have been trained to arms and submitted to discipline, the great majority happily will return when peace is made. The self-sacrifice practised by these men will act as a leaven among our population—it has already done so. We shall emerge from this war a better disciplined, a more serious people—better equipped mentally and physically to cope with new conditions. We have learned what hitherto had only been suspected or at most known to a few, that we have not produced anything like our industrial maximum.

An insidious element of friction threatening to develop into class war has been sapping our energies. There have been faults on both sides, but daylight is being thrown over the situation, and the waste and loss of this friction has been laid bare. If we do not take to heart this great experience and alter our ways for the better, then we deserve to go down as a nation; but I am persuaded that the lesson is being learned, that the picture now visible of industrial waste and loss—a loss that falls most hardly on the masses of the people, will not pass before our eyes unheeded.

Not only was there loss through friction between employer and employed, but in many industries we were continuing to use out-of-date tools and methods long after they should have been discarded. A long era of prosperity had not, indeed, caused decadence, but was threatening to do so. The war has shaken us up and shown us the realities of life, making the mistakes of the material side with which we have to do here plain and unmistakable.

To beat the national enemy, we had to re-equip our workshops, and the new equipment will be available, to a great extent, for future work. Moreover, we have been taught by a bitter lesson that up-to-date equipment is as necessary, if we are to maintain our position as an industrial and commercial nation, as it was to enable us to maintain our international position.

Friction between employers and workpeople led to restrictions on output, indifference led to utilising old tools and methods; both

meant decrease of productivity. The necessary increase can readily be obtained by remodelling our system in these respects. How this can be carried out so far as reorganisation of the industrial forces of this country is concerned, will be developed later; and is dealt with in greater detail in the report presented by a committee of investigation, which has been working for this Association.

**ATTEMPTED FORECAST OF OUR INDUSTRIAL FUTURE.**—I want to attempt now to make a forecast of what may be expected in the commercial and industrial spheres when we sheathe the sword. Germany has overrun some important manufacturing districts. Belgium, North-Western France, and Poland have not only been occupied by the enemy, but machinery and industrial equipment have, in many cases, been removed to Germany. It is reported that railway tracks have been torn up, in order that their materials might be used for military purposes elsewhere. The busy industrial areas mentioned have undoubtedly suffered very considerably, and will require to reconstruct and re-equip towns and factories, and to reorganise the labour force. To set commerce and industry at work again on anything like the previous scale must be a work of some time. On the other hand, in spite of every effort, Germany has found it impossible to interfere with the industries of the United Kingdom by either force or intrigue; nor have the Entente Powers as yet invaded Germany. Indeed, for the purpose of this forecast, it is wise to assume that German industrial equipment will not be affected detrimentally by the war. Even though we should invade Germany with a view to inflicting not only defeat, but punishment, our purpose will not include industrial destruction. We shall undoubtedly do our utmost to punish those, whatever their rank, who have been responsible for the many crimes committed against humanity during the past two years. But this does not necessitate the ruthless destruction of mill, factory, or mine. We can quite adequately punish Germany without putting ourselves on a par with her in methods of destruction and brutality. The military caste must be summarily punished, and the entire nation must be made to realise the sentiments of horror that their delight in the sinking of the *Lusitania*, the executions of Miss Cavell and Captain Fryatt, have aroused throughout the world. Every instance of insensate brutality

must be atoned for by the guilty parties, and the nation, as a whole, must be taught such a lesson as shall make a repetition of those savage methods impossible. We feel our ability to carry through this salutary work; but when this is effected, and when once again the world begins to get into its normal stride, so far as one can foresee, England and Germany will for some time be the only two European nations prepared to take any considerable part in international trade.

Meantime, during the period of the war, two countries—the United States of America and Japan—have enjoyed new and unlooked-for trading advantages. So far as competition from the United States is concerned, it is probable that we need not feel unnecessarily pessimistic. The South American States are at the beginning of a period of development which may well prove to be rapid. The possibilities opened up by the Panama Canal route, even though the present canal should prove a failure, will not be resigned before another attempt is made to pierce the isthmus; that a cutting will eventually be made is, in my opinion, beyond question. American developments then may be expected to take place principally on the American Continent, in the Pacific, and in the Far East. In these regions, there is ample room for both British and American enterprise.

Nor will Japan, for some time to come, at any rate, compete with our staple manufactures. The development made by Japan during the war would seem to indicate that it is Germany and not Great Britain that will have to bear the brunt of Japanese competition. Small goods and fancy articles which came freely into our markets from Germany and Austria before the war are now being made in Japan. Our merchants being unable to get supplies of these goods, sent samples to Japan with the most satisfactory results as to price, finish, and quality. Thus we have been able to extend our business relations with our Ally at the expense of our enemy. Moreover, although there is no certain information on the subject, it is more than possible that when normal trading is resumed, it will be found that Japan has been extending her business in these and other classes of goods into other markets hitherto the preserve of the Central Powers.

Hence, it is of special interest to attempt to forecast to what extent and with what prospects England and Germany will be

in competition in international trade after the war. This will depend, for the most part, on two sets of factors: (1) the internal industrial conditions of each country; and (2) commercial factors. So far as the former are concerned, there is much that this country should realise and take to heart.

The United Kingdom, in spite of the war and its heavy drain on our resources, has been enjoying an exceptional time of seeming prosperity. A large section of the workpeople have been earning high wages, whilst some employers have been earning handsome profits. High prices, high wages, high profits have been the order of the day: the return of peace will very considerably modify the last two of these, and how will those affected face the change? To understand how the parties will answer this question, certain agreements must be remembered. Foremost among these is the State guarantee that certain Trade Union restrictions and Government regulations which have been in abeyance for the period of the war shall be re-imposed when peace is restored. If we were reverting to pre-war conditions, there would be much to be said for this; but one hopes that both parties realise fully that conditions have radically changed, and that, in consequence, both employers and workpeople must be prepared to meet the new situation in a new spirit. Why were these agreements and regulations set aside? Because it was known that they hampered output, and our military success depended upon our producing the greatest possible amount of munitions of war. *Our commercial success will now equally depend on getting the utmost possible production out of our industrial equipment.* Are we, then, going to restore these obstacles just at the most critical moment?

With the return to more normal times, the national necessity for war stores and munitions will cease, and our industrial forces will have to rely on the home and foreign markets for employment. Foreign competition will almost certainly be greatly intensified. There may be, at first, a great demand for manufactured goods of all kinds as a consequence of decreased supplies during the war, but all the principal trading nations will strain every nerve to get the greatest possible share of orders. If under such circumstances we indulge in an internal struggle between capital and labour, instead of bending our whole energies to retain and extend our hold on markets, we shall lose an opportunity which is not likely

to return. And yet there is a widespread expectation among employers and workpeople that the European War will be succeeded by serious industrial strife.

So far as the commercial factors are concerned, we have almost everything in our favour. We have not outraged the sentiments of humanity by employing inhuman methods in waging war. We have retained our position as the headquarters of the Money Market. We have our shipping resources and equipment practically intact. Our merchants and exporters are keen and ready to carry on their business with even greater energy than before the war. We have arrears to make up, but have the will and, with harmony at home, the ability to carry on a more extended trade. Our capital has not been seriously affected, and there are no signs that it will be—our financial establishments and banks are prepared to do their share.

Turning to Germany, there is a most interesting condition of affairs to study. If beaten in the war, Germany will be a poor country; the economic position will be deplorable, but hardly irreparable. Every section of the community has already felt to some degree the effects of the war. When peace comes, there will be a determined attempt to regain the old position. A disciplined people, acting under a Government that will be compelled by circumstances to foster every possible means for repairing the broken machine of trade and for restoring the national wealth, will, without any doubt, be prepared to make heavy sacrifices to regain what has been lost. The Government will offer advantages in the shape of low railway rates and canal facilities, and, as far as possible, bounties on export business and on shipping, to encourage and to extend foreign trade. Manufacturers and merchants will cut down profits, and workpeople will be carefully taught that only by increased productivity and by a period of low wages can that which has been lost be regained. One foresees a remarkable attempt by a united and determined people to make good, in as short a period as possible, the waste and loss occasioned by the war and the blockade. German goods for export will be cheap, and the low price will be still further emphasised by the depreciation of the Mark. For so long as the Mark is at a discount, there will be a *pro tanto* advantage to export trade; and, although the Mark may eventually regain its par value, a few

months or even weeks will have an appreciable influence on re-opening foreign business.

Thus a comparison of English and German possibilities in foreign trade on the resumption of peace shows that there are certain advantages on both sides. The German advantages are solid and appreciable, but if England is seething with industrial friction, the advantages she possesses will be neutralised and her failure a certainty.

This leads us to consider whether a policy can be devised which will remove causes of friction and assure to our industries a new era of prosperity.

THE NEED FOR NATIONAL ORGANISATION.—It is, at first sight, curious, but still very natural, that Press and public should from time to time be obsessed with one idea. As the war developed, there has been a growing tendency to demand organisation in every sphere of national life. The striking successes scored by Germany have been universally and probably rightly ascribed to thoroughness of organisation and complete preparedness before provoking the conflict. As a consequence, a comparison has been made between English and German military policy, greatly to the detriment of the former. And not content with this, further comparisons have been made, with the result that if one believed all that was printed in the newspapers or accepted what passes in private conversation, we should be led to believe that rule of thumb has been the leading British characteristic. It has been forgotten that Germany has for many decades prided herself on her Army, even as England has relied on her Navy. One has been a great military power, the other equally great at sea. The test of war has proved that Germany was a very difficult country to oppose by land, but that in naval matters England is supreme. The economist, however, has to go further and investigate into those matters which are connected with his science—viz., the production, the distribution, and the consumption of wealth. Can it be said that the want of organisation and other faults of our military system are typical of what has been going on in the industrial and commercial sphere? I for one cannot bring myself to accept the truth of this. Had our Economic interests been carried on under so-called War Office principles, we could not have built up the great position we occupy as world traders. What, then, are the

facts? To answer this question, one should remember the leading facts connected with our industrial development. This brings out some points which the superficial observer inevitably misses. For upwards of a century our industries have been gradually developing, and the progress has, on the whole, been along new and healthy lines—each decade has seen some advance more or less great.

German attention to industry and commerce is much more recent. She was able to benefit by our experience, nor was she slow in doing so. To take a simple illustration. A manufacturing firm of fifty years' standing has developed a system, and has equipped factory and workshop as occasion demanded. A rival seeing the possibility of competing successfully in the same business, organises a new company, raises the necessary capital, and is able to commence operations with plant, machinery, and equipment of all kinds absolutely up to date, and even with some new improvements. Under these circumstances, provided that the management be good and that there be a demand for the goods produced, the new firm has, on the manufacturing side, considerable advantages. The older firm, however, is not devoid of advantages. It has a certain connection, a goodwill, and, with able management, these will enable it to compete with the new-comer; whilst the managers will have time to consider how to put the manufacturing side of their business on a par with that of the rival firm. The position in a simple instance like this is fairly easy to understand. In the case of a nation with its many and varied interests, it takes a very much longer time for the situation to develop. The agitation for Tariff Reform and Colonial Preferences is a proof that several years before the war broke out some Englishmen were awake to the fact that a new condition had come into existence; and that if we were to preserve our advantageous position, we must take careful stock of newly-arisen factors in world-trade. For Germany was not the only, nor, perhaps, the most serious, of these factors. The United States of America from the time of the Civil War had bent her energies to the work of internal development. Having concentrated on this for nearly forty years, she began to expand a world policy, both political and commercial. Japan, too, emerged with unexpected suddenness into the arena. Thus, as the nineteenth century drew to a close, the economic interests of England required careful and earnest attention. The

fiscal controversy undoubtedly had the great and important effect of waking English traders out of the lotus-eating condition into which they were in danger of sinking. All our principal, and many of our less important, industries were carefully reviewed, with results that can be realised by a study of the annual statistics published by the Board of Trade. There was, however, a very subtle policy being pursued which required very minute knowledge and wide experience to grasp. It was our proud boast that we left trade free and untrammelled, that we believed in the health-giving effects of open competition. It needed the stern lesson of the war to make known how this generous policy could be utilised to our detriment by a rival commercial nation. The facts as to the exploiting of the mineral resources of the Empire, as to how the dye and colour industry and various bye-product industries, have been developed, so that certain vital trades almost passed under foreign control, came to light only just in time.

It became plain, as these facts leaked out, that we needed a better system of industrial and commercial intelligence. There was also a lack of unity of working among our principal industries incompatible with the growing interdependence which has been a marked feature of modern economic life.

Hitherto, apparently it has been no one's business to survey comprehensively the resources whence our raw materials are drawn. Even those resources within the Empire have been nervously left to be exploited by the first comer, and the mask of an English name has enabled foreign capital and energy to divert some of our valuable minerals to foreign countries, whence we have been compelled to purchase them at unnaturally enhanced prices. Sufficient of the facts have been made public to warrant the demand for reconstruction and improved organisation of those departments responsible for the national trade.

It would be most unwise as well as ungenerous to attempt to blame our Board of Trade. That department has, on the whole, worked hard and well for British interests. But it is both wise and necessary to criticise the policy that has over-weighted this one Government department. And, although there should be very careful consideration before either recommending or making a drastic change, attention ought to be given to the frequently expressed opinions of Chambers of Commerce and individual

traders in favour of the creation of a Ministry of Commerce. To this Ministry there might be transferred some of the functions of the Board of Trade, whilst, at the same time, the new Ministry might be responsible for maintaining that general survey over our trade and commerce without which any organisation we may attempt would be incomplete.

If this view be accepted, it is hardly fair to charge our industrial interest with lack of organisation. An examination of any one of our industries—shipbuilding, shipping, or the manufacture of goods for export—shows that each has been well, and in many cases exceptionally well, organised; but the organisation requires to be completed by some machinery with responsible officials to co-ordinate the organisation of the several interests. Even in this direction, something has been attempted. The Associated Chambers of Commerce gives, at any rate, the germ of an organisation for attending to this great need. We may ask whether this could be still further elaborated so as to give the country what is wanted. Have our Chambers of Commerce sufficient standing to make their Association strong enough for the work, or should we look to the State to supply the keystone to the arch? The answer to this will depend on the views of the individual attempting to give it. Perhaps the time has come when a word of warning should be uttered. Are we not getting too prone to fall back upon the State? We were, and perhaps still are, the most self-dependent people in existence. Both the employer and the Trade Union has, in the past, been but little inclined to turn to the State. Can the completion of our industrial and commercial organisation be adequately attained by the interests concerned, or must we look to another State Department or Sub-Department to effect what is required? Our past history suggests that before turning to the State, we should try the initiative of the interests at stake. This brings us to a farther section of the subject.

**INDUSTRIAL ORGANISATION.**—The organisation which has grown up with the development of our industries includes two very important but unequally-developed sets of organisations. The industrial army or labour force of this country includes all those who either organise industry or take any part, however important or however humble, in its working. From the captain of industry, or *entrepreneur* as our brave Allies call him, down to the humblest

wage-earner, we have a labour force which ought to be looked upon as one and indivisible. In connection with this force, we now have two sets of organisations whose interests some people consider to be antagonistic. I would here emphasise the fact that these two are really one force. Their main interests are identical, and they can best serve those interests by striving to minimise differences and by doing all that is possible to work together in harmony.

Though theoretically one, the labour force has perhaps naturally developed, for manual labour, Trade Unions and, for the organisers, Employers' Associations. British Trade Unions have a fairly long history behind them, and may be said to be in advance of any similar Unions the world over. But the fact that, of recent years, there has been a tendency for small unofficial sections of given Unions to kick over the traces and disregard the policy and agreements of their leaders, shows that perfection of organisation has by no means been attained.

Employers' Associations are of more recent formation, nor have they so far attained to anything like the same completeness. Both organisations, especially those of the employers, are in need of further development. It is hardly for the Economist to show how this can be effected. He can point out imperfections and make suggestions; only those conversant with the practical working can formulate a practical policy.

The most patent defects in these Associations are due to the very virtues of their members. The individual British business man is unexcelled by the business man of any other country. In times of rapid transition and crisis, he has again and again shown his leadership. He knows his own business thoroughly, and as a working unit he has taken a very high place. But one of the most marked developments of modern trade is a growing interdependence of industries. Hand in hand with this, we have become familiar with another phenomenon—the amalgamation of businesses of various dimensions into one large company or corporation. The day of the small concern in either the commercial or manufacturing spheres is practically over. This is as marked among banks as among steel and iron companies. These two and somewhat parallel developments are making a new demand on the individual. He and his predecessors exemplified

individualism: the new stage upon which we have entered demands a modification of the old policy. Business in common with everything else, is subject to evolution, and evolution on healthy lines can only be obtained by grasping fundamental facts and by applying experience in accordance with economic laws. There need be nothing revolutionary about the required changes in our business organisation. We merely have to note what has already occurred, mark healthy tendencies, and clear away or prevent obstructions to natural growth. Our past history amply justifies us in pursuing this policy without uncertainty as to the result. Our industrial history is one of the best examples of steady and, on the whole, well-ordered evolution. We have shown our ability to adjust ourselves to the needs of the moment. As a race, we are healthily conservative without being reactionary. That is to say, we know how to preserve what is good in the old and to amalgamate it with the new. In other words, our organisation enjoys that useful quality of elasticity which enables us to keep abreast of the times.

Bearing this in mind, where are the defects of our business man, and to what does he need to give attention in order to come into line with the most recent requirements ? As I have just said, our business man's qualities emphasise his defects. For generations he has worked as a unit, and individualism has become almost second nature. The call now is that the individual shall sink a part of his personality and become, so far as one side of his activities is concerned, a member of an Association.

We have had employers' Alliances, Federations, and Associations. Some have failed, some have managed to keep afloat, others have had a certain amount of success. None has hitherto quite risen to what is required. To the onlooker, it would appear that when our employers meet as an Association, there is a lack of sympathy among the members, and, if this persist, it would be fatal. Each individual knows his own business; he does not know, and perhaps it would be true to say, that he does not care to know his neighbours' concerns. At any rate, as a result, there is a want of cohesion, there is a lack of that co-operation which is required if the Association is to be really successful and accomplish the objects for which it has been formed. This working in co-operation, the large organisations of capital, and the working together in

Associations, are comparatively new things to our business community. Time and experience will put things right; at present, we have not accustomed ourselves to a newly-developing condition of affairs. Our business men then need to focus their attention on these early ailments of the movement, so as to get them remedied as soon as possible.

A second group of defects arises indirectly, but almost inevitably, from that which has just been considered. Some Alliances, Rings, and Associations have failed and come to an end. And, in certain cases, the cause has been unmistakable, for there has been a lamentable want of loyalty and, even in some cases it must be said, of honesty to the agreements entered into by the Association. Only to mention one instance of this: the New Trades Combination Movement caused a considerable stir during the late nineties of last century, especially in the Midlands among the metal trades. Articles appeared in the journals, and a book<sup>1</sup> was written explaining the new movement. Great hopes were entertained that a new era had opened out before both capital and labour. But all ended in failure. There existed, for a time, a kind of syndicalism —a syndicated industry enabling employers to increase their profits, and the workpeople to earn abnormally high wages. So long as competition could be kept out of the market, things went swimmingly and a specious prosperity developed. But the consumer was being exploited, and the increased prices charged for such goods as metal bedsteads, gave would-be competitors and unscrupulous members of the Alliance their opportunity. The cheap wooden bedstead made its appearance on the one hand and, on the other, there were such things as secret discounts and commissions, with the result that this special alliance ended in failure. The history of that short-lived but industrially-instructive movement has yet to be written. Its cardinal facts should be known to those who now have an opportunity for shaping the industrial future of this country.

Three lessons stand out prominently from this experience: (1) We must learn to work together in association; (2) all members of an Association must be absolutely loyal and honest to their engagements, either written or implied; (3) such Associations must be subject to regulation, or the community will be exploited.

<sup>1</sup> *The New Trades' Combination Movement*, by E. J. Smith. Rivingtons, 1899.

Nor is it impossible to suggest a method by means of which this may result. When Employers' Associations have justified themselves, it should be possible to obtain State recognition for them, and it would be practical politics, when both Employers' Associations and Trade Unions have developed to the point at which both merit State recognition, to enforce under penalty, agreements made between them on all those, either employers or workpeople, who wished to work at the industry within the area under the recognised Associations. Thus it would not be necessary to make membership compulsory—self-interest would be the extent of the pressure.

Turning to Trade Unions, we also find defects which require removing. The policy of union has been practised among the workers for upwards of a century, and for at least half-a-century with well-marked success in certain directions. In the first instance, it was the aristocracy of labour that realised the advantage of collective action; but notably, since the eighties of last century, efforts have been made to extend the policy to all grades of labour. Hence the ailments which have to be noted are rather more mature than those affecting Employers' Associations. Success in certain directions has perhaps led some of the more ardent spirits to expect more from their Unions than working conditions have allowed. The experience of old and well-tried leaders has led them to adopt a more cautious policy than the young bloods are inclined to accept. Thus there has been a want of loyalty—different, it is true, from that met with among employees—but equally disastrous if persisted in, to the object in view. All the men in a given industry should be members of the Union, provided that the Union is well-organised and ably administered. This should, however, be the result of self-interest and a regard for the good of fellow-workers rather than of compulsion; and how that may be attained has just been suggested. Perfection of organisation will come when workpeople not only realise the real possibilities of collective action, but are prepared to follow loyally leaders who have been constitutionally elected. The leaders are in a better position to know the facts of the case immediately under review; but if their leadership has been found faulty, there should be adequate machinery for replacing them with men commanding the confidence of the majority of the members.

When agreements have been entered into, the terms should be implicitly observed, even though they may turn out to be less advantageous than was expected. Periodical revisions would make it possible to rectify mistakes or misapprehensions. But it cannot be too strongly emphasised that for both sets of organisations the great factor making for smooth and satisfactory working is absolute loyalty to the pledged word. A large employer of labour, writing to me on this point, said: "In my opinion, no industrial harmony can exist between employer and employed until Trade Unions, through their representatives, can compel their members to adhere to and honourably carry out all agreements entered into with the employers. . . . In fact, until a more honest code of morals exists on both sides, no improvement can be looked for."

Further, there is the need for a more complete and authoritative central authority, both for individual industries and for federated trades. The machinery for this exists: it merely requires development.

When the local and central machinery has been perfected, the right to *strike*—which, in common with the right to *lock out*, as a final resource, should be jealously maintained—would be carefully regulated, and would only be resorted to as the considered judgment of the most experienced men on either side. It should be impossible for either an individual association or a section of it to order a strike or a lock-out on its own responsibility.

What I consider should form the main outline of industrial organisation is explained in detail in the Chapter on "Industrial Unrest" (cf. p. 20). At the head of this organisation there would be a real Industrial Council, representing the industry of the country. The Industrial Council appointed in the year 1911 has never had a fair chance to show its possibilities. It was established at a critical time, and perhaps the Government did not feel justified to throw a great responsibility on an untried body. Nevertheless, it exemplified a very wise policy, and one regrets that it has not been allowed to prove its mettle, for, even now, both employers and workpeople feel that some such Council is preferable to State interference, and there is a clearly articulated distrust on both sides of official arbitration.

There is no need at the present juncture to attempt a new experiment. Our old system, whatever its failings, has been

severely tested and proved to be sound. Its elasticity has been its salvation, and it is capable of still further evolution without entailing drastic changes. Indeed, the improved organisation that is now suggested would contain practically nothing that is new or untried. It would consist of natural developments of what already exists. Employers and workpeople have organised themselves into Associations and Unions; some of these have developed federations of similar or even of unconnected interests; and both parties have their national congresses, or, at any rate, the germ of them. The demand of the moment is that the organisations already in existence shall be perfected, and that these perfected organisations shall in all their agreements be loyally and honestly supported by their members. Success depends on absolute loyalty to the pledged word.

Here we have a practical policy suited to the needs of this critical stage in our history. The ideal organisation has yet to be formulated; but what is here proposed would form a definite step in advance, and the very elasticity of the system would be a good augury for the future.

Among the innovations recently introduced into this country, and one calculated to have important effects on our industrial well-being, is automatic and semi-automatic machinery. We have been accustomed to the use of labour-saving machines; indeed, this country was the birthplace of many of them. The re-equipment, however, of our factories for war purposes, in both tools and workpeople, has wrought a revolution comparable with that effected by the introduction of the steam engine.

From the point of view of craftsmanship, our old system had much in its favour. Our mechanics in certain trades had to be highly skilled, for the description of work turned out made considerable demands on the operative. In America and Germany, standardisation has been carried very much further than in this country, and, consequently, repetition work has been much more generally practised than with us.

One may grieve over the passing of our old methods, as one is sometimes tempted to regret the days of cottage industries. But neither is compatible with modern conditions, and an important part of the work of reconstruction and reorganisation will be connected with standardisation and the further introduction of

repetition work. This will call for the exercise of careful and experienced industrial statesmanship if trouble is to be avoided, for agreements will have to be framed which will, in the long run, work equitably and satisfactorily to all parties concerned.

A committee of this Association has been investigating for the past two years into the extent to which women have recently replaced men in industry. A certain amount of exaggeration exists as to the number of women who have entered our factories or undertaken services left vacant by men who have joined the Forces. The total number is, in round figures, about 600,000 as against 5,000,000 men who have joined either the Navy or the Army as a consequence of the war.

The entry of large numbers of women into industry has been viewed with a certain amount of alarm by the men; and Trade Unions have naturally stipulated, where possible, that these women shall receive the same rates of pay for the same work as the men, and that when the men return the women shall give place to them.

That there is but little ground for alarm as to the influx of women can be realised by a consideration of a few facts and figures. The majority of men who enlisted were workpeople of one sort or another: of these, unhappily, some have been killed in battle or have been rendered incapable for work. Even so, the majority will return requiring occupation. What opportunities will they find?

To answer this question at all satisfactorily, it is necessary to consider some determining factors. Thousands of men have left indoor occupations and their accustomed town life, and have been trained, drilled, and disciplined under open-air conditions. They have lived, worked, and fought in the open country, in some cases, for many months. This new experience has had potent effects. Physique has improved, the outlook on life has changed; in many cases, new hopes for the future have been formed. Inquiry shows that there is a division of opinion as to the extent to which disbanded members of the Forces will decide on making a radical change in their mode of life. Yet the experience of what occurred after the South African War warrants us in assuming that considerable numbers will only return to indoor occupations and town life if there be no alternative. It is too soon yet to form an opinion as to what opportunities there will be for land settlement, but it is known that offers will be made both at home and in various parts of the Empire. A moderate estimate of those accepting

these offers, and of our losses of killed and permanently disabled, would be at least 1,000,000. Then we shall undoubtedly require, at any rate for some years, a much larger standing Army. Even on a peace footing, this at a moderate computation may be put at a million men. These two figures, and neither of them err on the side of exaggeration, will absorb 2,000,000 men, who will be permanently lost to their old occupations. Moreover, there is good ground for anticipating that if the war concludes before our resources are unduly strained—and there is every prospect that it will—there will be a period of good trade. We have to restore our own depleted stocks of goods, our mercantile marine demands a large amount of new tonnage, railways and other transport services will require much new equipment. Turning to the Continent, parts of France, Belgium, and other of the *entente* countries will need reconstruction works of considerable proportions, and in this work we shall play a great part. World markets, too, have been kept short of many manufactured goods. We shall be in a position to both finance and carry on a greatly extended system of industry and commerce, for not only is our banking system prepared to face this, but our man force has been greatly improved, and our industrial equipment to a great extent has been remodelled.

Reverting to the somewhat thorny question of the women who have been engaged on what were men's occupations, I see no cause for alarm. Many women came forward from motives of patriotism, and will gladly resume their former state. The question, I believe, will rather be how we can obtain the labour necessary to cope with the post-war demand. The new equipment of our factories will place us in a position to increase very greatly our output; and this should enable us not only to face a possible labour shortage, but if the recommendations made by this Section of the British Association meet with a favourable response, our labour force should enter upon a new period of prosperity consequent on a remodelling which has been rendered possible by a reorganisation of our industrial machinery. This new epoch for labour would include higher wages, shorter hours, and better working conditions. To effect these salutary advances, both employers and employed need to exercise sanity of judgment, frankness in mutual discussions, and a recognition of the fact that the prosperity and material well-being of each is bound up in a common effort to maintain and develop our industrial and commercial position.

## CHAPTER II

### INDUSTRIAL UNREST

#### *Committee of Investigation*

THE Rt. Hon. Charles Booth, The Rt. Hon. C. W. Bowerman, M.P., Sir Hugh Bell, Bart., Sir C. W. Macara, Bart., The Ven. Archdeacon Cunningham, F.B.A., Professors S. J. Chapman, E. C. K. Gonner, W. R. Scott, F.B.A., Mr. Sidney Ball, Mr. H. Gosling, J.P., L.C.C., Mr. Howard Heaton, Mr. Pickup Holden. *Chairman*, Professor A. W. Kirkaldy. *Secretary*, Mr. Egbert Jackson.

#### INTRODUCTION

At the Manchester Meeting a discussion was organised to consider this important industrial subject, and to decide whether it would be advantageous to carry out an investigation and make a report at the Newcastle meeting. The discussion was fully reported and published in *Credit, Industry, and the War*, pp. 17-67. As a result of this it was decided to appoint the above Committee, and the Committee of Recommendations made a grant to assist the work.

At the first meeting of the Committee a list of points for consideration was drawn up, and these were circulated to a large number of interested persons, in addition to the members of the Committee, so that the views of employers and labour representatives might be ascertained. Visits were paid by individual members to industrial centres, and there was a great amount of personal interviewing. In Birmingham some meetings of both workers and employers were held, and at these, the Chairman and Secretary were able to gather a good many interesting views and to ascertain the feelings of many of the parties concerned. The results of these inquiries were reduced to the form of memoranda which were widely circulated, with a request that they be returned to the Secretary with criticisms appended. From these sources a draft report was compiled which was circulated amongst members of the Committee, who met and discussed it.

The following chapter is the result of these labours. It consists of three main divisions—

- (A) The Causes of Industrial Unrest.
- (B) Attempts at diminishing Industrial Unrest.
- (C) Recommendations.

Section A gives the main views expressed as to the causes of friction. It was thought well to publish these even in cases where there might be some difference of opinion as to their worth or importance, for they show more especially the attitude of working people. It is necessary to realise the point of view held by the various sections of the industrial world, if a successful attempt is to be made to bring about harmony. After carefully weighing the alleged causes of unrest, and after considering attempts which have been made to bring about industrial peace, a number of recommendations have been outlined in Section C, and it is hoped that these may prove helpful in the solution of the great problem now facing the British people.

New conditions are producing an entirely new industrial situation. There is a need for greater productivity in all our leading industries. This greater productivity is a possibility, for we have not yet, in normal times, worked our hardest or produced our maximum. This, however, in the opinion of this Committee, can only be attained by perfecting methods and organisation, and to this end the question of cardinal importance demanding solution is that of distribution. A healthy maximum production depends on a system of distribution which is acceptable to all parties concerned.

Whilst, on the whole, accepting the substance of the report, some individual members reserve their opinion as to certain views expressed.

The Committee wish to thank the Secretary, Mr. Egbert Jackson, for the work he has done in obtaining material for their report.

### *Report on Industrial Unrest*

#### A.—CAUSES OF INDUSTRIAL UNREST

The main causes of unrest which have been suggested include—

1. The desire of workpeople for a higher standard of living.
2. The desire of workpeople to exercise a greater control over their lives, and to have some determining voice as to conditions of work. These include a consideration of the effects of *speeding up* on the one hand, and of limitation of output on the other.
3. The uncertainty of regular employment.
4. Monotony in employment.

5. Suspicion, and want of knowledge of economic conditions.
6. The desire of some employers for more regular and satisfactory labour.
7. The effects of war measures.

The problems of modern industry on its social side cannot adequately be studied apart from the conditions created by the pressure of commercial forces and by the requirements of manufacturing processes. Any policy of conciliation of interests must be based on a realisation of the interdependence of those questions of Labour on the one side and Capital on the other, which are too often considered apart from one another.

It may be added that, even from the point of view of the well-being of the working classes, there are elements of hope as well as of danger in the technique of modern production which just now call for examination.

CONSIDERATION OF ALLEGED CAUSES.—(1) *The Desire of Work-people for a Higher Standard of Living.* The demand for an increased share in the products of industry and the desire for a higher standard of living have been brought into greater prominence, largely because they are more easily understood and can be expressed in more definite terms. They resolve themselves superficially into a demand for higher wages, and naturally this aim appeals readily to the rank and file of labour. To the majority of wage-earners the difference between nominal and real wages is fairly well known, if not understood in all its theoretical aspects. An increase in the prices of the ordinary necessities of life at once makes itself felt, because it frequently entails the cutting down of some important items of expenditure. The margin of luxury is in general so small, even amongst the better-paid workers, that a comparatively small retrenchment comes as a hardship, and amongst the lower-paid workers may indeed involve the sacrifice of something essential to their well-being. It is noticeable that the great outburst of industrial unrest in recent years has been coincident with a rise in the cost of living; and the revival of industrial strife after the truce of the early months of war, followed upon a considerable and steady increase in prices, especially of food. This is shown in the table on next page.<sup>1</sup>

The proportion of working class income which is spent in

<sup>1</sup> Compiled from figures given in the *Board of Trade Labour Gazette*.

Months.	Index Number of Retail Prices of Food (Board of Trade Returns). July, 1914 = 100.	No. of Disputes beginning during month.	No. involved directly, in thousands.
<b>1914.</b>			
Jan.	—	54	30.6
Feb.	—	67	16.0
Mar.	—	105	17.6
Apl.	—	99	25.2
May	—	140	34.5
June	—	118	33.6
July	100	99	45.7
Aug.	116	15	1.9
Sept.	111	23	2.9
Oct.	113	27	5.0
Nov.	113	25	4.6
Dec.	117	17	1.2
<b>1915.</b>			
Jan.	118	30	3.4
Feb.	122	47	26.1
Mar.	124	74	12.9
Apl.	124	44	5.1
May	126	63	39.9
June	132	72	17.9
July	132½	40	202.1 (S. Wales Coal Strikes)
Aug.	134	49	23.9
Sept.	135	55	14.1
Oct.	140	47	10.5
Nov.	141	40	8.3
Dec.	144	17	2.8
<b>1916.</b>			
Jan.	145	38	9.0
Feb.	147	38	9.3
Mar.	148	44	53.6 (Dundee Jute work- ers and Liverpool Dock La- bourers)
Apl.	149	55	9.9
May	155	41	11.9
June	159		

normal times on food varies between 67 per cent. amongst the lowest paid, and 57 per cent. amongst the highest paid workers.<sup>1</sup> The importance, therefore, of any rise in food prices is considerable, and although overtime and increased output have considerably augmented the earnings of some classes of munition workers for the period of the war, the rise in the cost of living has been a heavy additional burden on *all* classes of workers. What is of consequence

<sup>1</sup> Board of Trade Inquiry, 1904. Quoted in *Labour Year Book*, p. 211.

to the workers is their real remuneration, and it may be argued that a rise in the cost of living justifies a corresponding rise from the pre-war scale of earnings.

In this aspect of the question there is more involved, however, than the mere maintenance of the present standard of living. Workpeople desire to raise their standard, and this desire has been stimulated by education. That it is justifiable and even laudable few will deny, but the extent to which improvement is possible is limited by the industrial development of the nation. It is impossible to raise the general standard of living indefinitely by raising wages, *without at the same time raising the productivity of our industries.*<sup>1</sup>

(2) *The Desire of Workpeople to Exercise a Greater Control over their Lives.* A further group of causes of industrial friction arise from the desire on the part of the workpeople to control their own lives, and have some determining voice as to the conditions under which they shall work. And here will be considered the important effects caused by *speeding up* and limitation of output. The democratic movement has, in recent years, extended from political to industrial life. Whilst disputes concerning wages are still the most numerous, the proportion concerned with questions of shop management, discipline and Trade Union principles has been increasing. The full significance of such demands seems not to have been realised by the workers themselves, and it is only quite recently that they have been formulated with any definiteness by labour groups in various parts of the country. It is probable, however, that such demands will play an increasingly important part in the industrial life of the future.

Perhaps the most important claim that organised labour has hitherto made is that it shall have some power in deciding as to the output of workers. The policy of restriction of output is defended as being a protection against *speeding up*, and the consequent reduction of wage rates. Many workmen claim to have experience of actual wage-cutting, alleging instances of men being induced to work particularly hard for a short time and then their rates being fixed on the new basis. Such practices should be condemned. It is important that employers should realise that there is a gain in the increase of a man's output quite apart from

<sup>1</sup> This is more fully discussed, p. 39, *Recommendations.*

the total amount of wages which the man receives. The overhead charges that each article has to bear may be lessened and the cost of production may be decreased at the same time that the amount of wages earned increases. The cutting down of piece rates may actually be very uneconomical, and is certainly an important source of friction. As one result of this investigation, it has been over and over again made plain that both employers and employed need to be reminded, that so far as wages are concerned there is a radical difference between the points of view of the parties concerned. The employer should give his attention to the *cost of labour and not merely to the amount of wages paid*. It matters comparatively little how much a workman receives each week so long as the cost of production is low and the output large. On the other hand, to the workman, the vital point is that his real wages shall be the utmost possible. It is very false economy to reduce wages by means of speeding up, if the result brings about a more than corresponding decrease in output, owing to its deliberate limitation.

Limitation of output has sometimes been advocated in order to benefit the members of a trade by preventing specially good workers from setting a standard to which less skilled workers could not attain, and by distributing the work to be done amongst a larger number of workers. This last conception is based upon the work fund theory, which assumes that there is only a certain amount of work to be done, and therefore, if a certain number of men work faster than the average, there will be less employment for others. This theory is also used to support the demand for a shorter working day,<sup>1</sup> and it is important that its fundamental fallacy should be made clear. If the present organisation of industry were static and prices were fixed at their present level, it would be true to talk of a work fund. But everything which tends to lower prices, tends also to increase the demand for commodities and consequently the demand for labour. Thus, apart from the improvements constantly being made in machinery, methods and organisation, any increase of the productivity of labour tends to lower the cost of production and, consequently, the selling price. Limitation of output then cannot increase the demand for labour, it may even lessen it, and undoubtedly tends to lessen the amount available for paying wages.

Another claim which organised labour has put forward is that

<sup>1</sup> A shorter working day may, of course, be justifiable on other grounds.

of determining the classes of workers who shall be employed on particular jobs. In the past it has often used its power to prevent the employment of women in particular kinds of work, and is especially manifested in a refusal to work with men who are not members of a Trade Union. The determination to make Trade Unions of greater importance in industry comes to a large extent from the knowledge that the more perfect their organisation, the more easily will they be able to increase the material benefits which they can obtain for their members. But there is more in it than this. Work-people believe that the power to control their own lives and the conditions under which they work—*i.e.*, industrial freedom—can only come through a strong and disciplined organisation. Many employers insist upon their right to employ non-unionists; some because they do not consider it right to enforce membership of a society in that way, others, perhaps, because they do not wish to see the Trade Union growing too strong. The increasing importance of the non-unionist problem has brought into prominence the suggestion of compulsory membership of Trade Unions. Labour opinion is very divided on this question. Although some now urge such compulsion by the State, there are still large numbers who would oppose it, because it would seem to involve compulsory arbitration and State control of the policy of the Unions. At any rate, whatever be decided on this question, it seems reasonable that employers should recognise the right of their employees to negotiate with them through their Trade Unions. Although it may be more difficult to resist the workers' demands when thus organised, it is easier to negotiate with such an organisation than with individuals, and it should thus be possible to secure uniformity of conditions throughout the trade.

In many minor ways organised wage-earners have attempted to show their determination to control conditions of employment. For example, strikes have been declared to resist the dismissal of a workman for what the men consider an inadequate reason, to resist what is considered to be harsh conduct on the part of foremen and gangers, as well as to enforce good conditions of work in the factory. All these demands are in effect claims to some share of control over the discipline of the workshop. In this connection it may be mentioned that a local conference of wage-earners in

Birmingham recently sent to the Trades Council a series of resolutions concerning the reorganisation of industry, of which the chief claim is for "some measure of control of the workshop, with corresponding responsibility for output and discipline." It is obvious from this that some of the workers are asking for much more than an increase in wages; they are, in effect, asking for a change of status. They are dissatisfied with the status of the wage-earner, and call into question the actual relationship that exists in industry to-day between the different factors concerned. In fact, workpeople are taking up a position which will preclude a mere patching up of quarrels, or a mere scheme of wages adjustment. What they aim at is a change in the relationship between employers and workpeople.

(3) *The Uncertainty of Regular Employment.* Quite as important as the question of wages in dealing with the standard of living is that of the *uncertainty of employment*, and all the workpeople who have submitted memoranda to this Committee agree in emphasising this as one of the main causes of industrial unrest. The degree of uncertainty varies from trade to trade, and amongst such workers as the dock labourers is so great as to justify the phrase *casual labourers*. The majority of workers are employed for no fixed term and may be discharged at comparatively short notice. Although normally their employment may be steady and certain, in times of depression many are actually discharged, and this causes a feeling of insecurity even to those who may claim to be highly skilled. The slender resources of working-class families, and the very close relationship existing between employment and livelihood, make this uncertainty a powerful factor in their calculations. It is often said that the workers live constantly within a week or two of the workhouse. The fact that comparatively few are ever plunged into extreme poverty makes little difference. The possibility of such a calamity is always present and the fear of it is great. Unemployment insurance has lessened the evil for certain large groups of workers, but the benefits are not enough to save the married worker from running into serious debt if his spell of unemployment be at all prolonged, and the majority of workpeople are entirely unaffected by the scheme. *From the social point of view in general, and from the point of view of industrial harmony in particular, it is desirable*

*that employment be made as regular and steady as possible.* Efforts have already been made to decasualise labour at the ports and docks with some success ; this organisation should be improved and extended. With regard to more skilled workers, something might be done by establishing the custom of giving longer notice to those whom it is intended to discharge, whilst the extension of unemployment insurance to all workers and the increase of benefits would lessen the hardship which lack of employment now involves. The expenses thus incurred should be added to the cost of production, and would no doubt have to be balanced by increasing the output per unit of capital and labour.

(4) *Monotony in Employment.* That there is considerable monotony in some employments cannot be denied, and in many industries there is more to-day than there was before the introduction of machinery, but constant repetition work is gradually being taken over by machinery, which is becoming more and more automatic. It is desirable that such monotony as exists should be lessened as far as possible, for constituting, as it does, a considerable strain on the nervous system, it predisposes the workers to unrest. Monotonous work quickly becomes uninteresting and irksome. It is important, however, to bear in mind the distinction made by Professor Marshall between monotony of work and monotony of life. It is the latter which is to be dreaded. The city worker is compensated for the greater monotony of his work, as compared with those engaged in agriculture, by shorter hours of employment and the greater variety of his life during leisure time. Comparing the different classes of workers in manufacturing industry and commerce, however, it cannot be said that monotonous work is balanced by greater opportunities of a varied life outside the factory or office. And, at any rate, work takes up the greater part of the time even of the urban workman. Thus, if monotony of work is inevitable under present conditions, it is at least desirable that the industrial and social conditions of workpeople shall be so improved that their life as a whole may have variety. There are plenty of opportunities for pleasure and recreation in modern town life. What workpeople need are opportunities for education and the material means of obtaining recreation. And inside the factory the evil effects of monotonous employment may be lessened by improved conditions—brighter and

healthier buildings, as well as by a better distribution of rest periods.

(5) *Suspicion and Want of Knowledge of Economic Conditions.* One, if not the chief, cause of unrest appears from the opinions submitted to the Committee to be the suspicion that exists among a large section of workers that they are being exploited. This is due to a variety of reasons.

Foremost amongst these is a want of knowledge of the facts concerning the economic condition of a given industry. Very few of either the employers or workpeople know all that they are entitled to know of this, and hence on both sides there is more or less misapprehension. Labour, especially, is in the dark as to market conditions, profits, and the commercial and financial position as a whole. Nothing is more conducive to unrest than suspicion born of ignorance. A parallel might be drawn between the present state of the industrial sphere in this respect and the somewhat similar unrest which existed in the financial and banking spheres during the first six or seven decades of last century. The recurring crises were to a great extent due to, or at least intensified by, suspicion resulting from want of knowledge. Of recent years the panic element has been largely removed from these crises, and at any rate one great cause of this is that knowledge and experience have very greatly lessened the suspicion that used to work so disastrously.

It is possible that if the relevant facts were available to all concerned, much of the suspicion would be seen to be baseless.

(6) *The Desire of Some Employers for more Regular and Satisfactory Labour.* (i) In several districts and in very diverse occupations, some employers complain that during busy periods workmen are apt to work irregularly. They will perhaps work three or four days with overtime, and then fail to put in an appearance for two or three days. If questioned, the men probably say that they had earned sufficient to meet their needs for the current week and did not see any necessity for working the full six days. This is, of course, exceedingly annoying at times—and may be disastrous during times of national crisis. Output is curtailed; valuable machinery, which might be running continually, is only doing part work; and from more than one point of view the conditions thus occasioned are more than regrettable.

The trouble is probably most common at ports and docks—(e.g., the troubles at Liverpool during the congestion)—and in shipbuilding yards. At least it is from these centres that the complaint comes.

To find a solution it is necessary, however, to consider the problem thus raised from other points of view. At docks and in the shipbuilding industry employment is, at the best, fluctuating. Busy and slack times are probably more distinctly marked in these occupations than in any other. Workpeople who suffer from irregular employment are notoriously the least inclined, in general, to practise thrift and put by for “a rainy day.” Hence, a great many of those thus employed accustom themselves to a comparatively low standard of living, and it may be suggested that in these occupations the very conditions of work are, in some cases, an incentive to indulgence in drink.

Thus, one must consider the subject also from the worker's point of view. He has to put up with slack times. When these come he is paid off; there is little question of consulting his convenience, and he has to order his life accordingly. When busy times come he is begged to work continuously, and very often for long hours. It is true that he is paid for his work; and sometimes, with overtime, his earnings may be quite considerable. But the conditions are now reversed, and he has the clear right to consent or not to the call that is made upon him.

We would suggest that, in the first place, every effort should be made to minimise as much as possible irregularity in employment, and especially in wage earning. Unemployed insurance might assist in this latter point. And even though the cost of this were shared by employers, it might in the long run prove to be a financial gain, as it might and probably would result in a more reliable labour force.

The standard of living should be raised, the working of overtime should be discouraged; and wherever and as far as possible, men should be accustomed to the earning of regular wages.

If employers claim the right to work their men continuously during busy times, and pay them off when work is slack, the men have an equally good right to curtail their working hours when things are busy.

The practice of thrift and forethought would help matters.

If men, working in occupations where there must be a certain amount of irregularity of employment, could be persuaded to fix a standard of living, and, by saving when earning above the average, level up their earnings so as to keep to a steady standard, a great point would be gained. To employers we would say: do your utmost to regularise employment, discourage overtime as much as possible, and, above all, remember that the labour force is as human as you are and should be treated accordingly. To the workers in occupations where these difficulties arise, we would say: look ahead, estimate what the year's work will bring in, exercise thrift when work is plentiful, and thus average out your earnings so as to enjoy the highest standard possible.

(ii) Some employers complain of the growing tendency towards uncertainty in the labour force. In their opinion, during the past few years labour has been less reliable and less efficient. They attribute this to a variety of causes; as, for instance, that recent legislation has placed labour in a position of advantage as compared with other sections of the community; that labour feels its growing political importance and even power, this being increased by the vote-catching devices of the old political parties; that the teachings of social reformers, ranging up to syndicalism and class war, have had, or are having, their effects.

(iii) Some employers also point out that the above-mentioned tendencies lead to restriction of output, and hence the sinking of further capital in plant, machinery, and extensions is a matter for very serious consideration; in fact, that these tendencies account for the persistence, in certain instances, in this country of obsolete methods and equipment.

(iv) Another complaint made by certain employers is that where time rates are paid the standard of work and the pace of the least skilled and slowest man employed on the work in question is apt to set the standard for the whole. To meet this objection, at any rate one attempt has been made by the men themselves to improve matters by introducing a system of grading. The National Society of Brassworkers and Metal Mechanics has elaborated a scheme which is described by its originator as follows<sup>1</sup>—

“ My object is to form a minimum standard, which shall regulate

<sup>1</sup> Cf. *The Life Story of W. J. Davis, J.P. Frontispiece.* For particulars of the scheme cf. *ibid.*, pp. 274-281.

trade custom and recognise skill, dexterity, or ingenuity at their true value, and give to the best mechanics an opportunity of earning wages in proportion to and as a reward for their extra zeal and accomplishments."

This method of grading workmen according to their skill and attainments deserves serious consideration, and should be brought before conferences of employers and employed when discussing wages questions.

(7) *The Effects of War Measures.* During the present war, other conditions have played their part in causing industrial friction. When the war broke out, the workers as well as employers, impelled by a sense of loyalty, hastened to settle their outstanding disputes and to proclaim an industrial truce. This truce only lasted until the early part of 1915, although, as the figures which we have already quoted show, the number of disputes throughout the war has been considerably lower than in the months immediately preceding the outbreak of hostilities. In so far as the truce was broken, however, the most important cause was the growing rise in the cost of living ; and this was aggravated by the high profits which many companies showed, especially those concerned in shipping. It seemed to the workers that the needs of the nation were being exploited for the sake of private gain : and the fresh outburst of strikes in 1915 was as much a protest against such exploitation as a demand for higher wages.

Both employers and employed find their freedom of action curtailed by the various measures taken by the Government during the war, nor is it unnatural to find that both parties are chafing under the restraints imposed upon them, especially under the irksome condition created by the Munitions of War Acts, whilst the decisions of the tribunals in some cases appear too harsh to the workpeople. The irritation thus caused on both sides has undoubtedly increased the possibility of friction, and the danger is intensified by the physical strain involved in long hours of work at high speed. Thus conditions during the war have been more than usually unfavourable to industrial harmony, and it speaks much for the loyalty and self-restraint of all parties that the number of disputes has been so small.

## B.—METHODS ADOPTED TO DIMINISH INDUSTRIAL UNREST

These include—

1. Conciliation and Arbitration Boards.
2. Arbitration 

(a)	Voluntary.
(b)	Compulsory.
3. The Industrial Council.
4. Profit Sharing and Co-Partnership.
5. Co-operation.

(1) *Conciliation and Arbitration Boards.* In many industries arrangements exist for dealing with disputes as they arise. Either permanent Conciliation and Arbitration Boards have been set up to which all disputes are automatically referred, or the rules of Trade Unions and Employers' Associations provide for the summoning of joint conferences when occasion requires. The success of these arrangements naturally depends upon both employers and workers being well organised and involves recognition of the Trade Unions by employers. Where such recognition is withheld, it is obviously difficult to construct machinery for dealing with disputes, and it is likely that differences occurring between employers and men may involve strikes and lock-outs.

The number of permanent Conciliation Boards and Joint Committees has steadily grown in recent years, and the value of their work is shown by the small proportion of cases referred to them which ultimately involve stoppages of work. In 1913, 195 Boards and Joint Committees took action within the knowledge of the Board of Trade, and together they dealt with 4,070 cases of dispute. Of these they succeeded in settling 2,283 cases : 291 cases were settled by umpires whom the Boards and Joint Committees appointed, and in only thirty-one instances did any stoppage of work occur. The function of these permanent Boards is to bring the employers and workers together to discuss and settle the differences existing between them. In the event of no agreement being reached, arrangements often exist for the appointment of one or more arbitrators whose decision it is agreed to accept. But the system being voluntary, the workers always retain the right to enforce their demands in the last resort by striking. Conciliation is always more satisfactory than arbitration so far as it goes, for arrangements made by mutual agreement are more acceptable to both

parties and consequently more likely to be kept. It is desirable that the machinery of Conciliation Boards should be extended and perfected, and that it should be made a permanent feature of each industry. This has been attempted by the organisation of the Industrial Council. (See page 36.) The temporary Joint Committees called together when disputes have arisen are less satisfactory from this point of view. By the time they meet the dispute may have developed considerably, passions may have been aroused, and it is the extremists of both parties who are likely to be chosen to negotiate. The chances of a peaceful settlement are thus considerably lessened. What is needed is a permanent Board or Committee to which all disagreements shall be automatically referred as soon as they arise.

(2) *Arbitration.* (a) *Voluntary.* There are many differences that cannot be settled by mutual agreement, and the only method that has been tried for dealing with them so as to avoid strikes and lock-outs is to refer them to the arbitration of a third individual or group of individuals. Arbitration has been much less used than conciliation, and has certain inherent disadvantages. It is difficult to find an arbitrator whose impartiality is beyond dispute, and who at the same time knows the industry thoroughly. He is likely to belong, either directly or indirectly, to the employing class, and consequently, with the best intentions, to sympathise with their point of view rather than with the workers: if the award be likely to be distasteful to one or both parties concerned, there are no means of enforcing it, and in consequence it may be of little effect. As a matter of fact, it is rather surprising how few awards are rejected on the whole. A system of fines for breach of arbitration awards has been adopted in isolated instances, but it has never become general nor is it likely to do so.

The difficulty of agreeing as to the arbitrator to be chosen sometimes results in referring the matter to the Board of Trade. Under an Act passed in 1896, the Board has the power to intervene in any dispute and to bring the parties together for conference. It may also appoint arbitrators when invited to do so by the parties concerned. At first it contented itself with merely appointing arbitrators when thus asked, but in more recent years it has taken the initiative in several important disputes, and during the war its activity has increased considerably. State intervention

in industrial disputes may play a more important part in the future than hitherto, but it is important to realise its limitations and disadvantages. Unless actually invited to settle a dispute, the Board of Trade has no means of knowing any disagreement that exists until matters have gone so far that a strike or lock-out is threatened or actually in progress. In most cases it is too late to avert a stoppage of work, and quite apart from the loss involved the difficulty of settling the dispute is then much greater.

The arbitrators appointed by the Board of Trade do not appear to enjoy the confidence accorded to arbitrators chosen by the parties concerned. The appeal to the Board is usually made as a last resort when neither party is inclined to accept the other's claims. Thus, from the outset the arbitrator is in a difficult position. From the point of view of the men, too, there is the further cause of suspicion that he is likely to be connected with the employing class, and to appreciate their interests more fully.

(b) *Compulsory.* The war has led to a great extension of State interference in economic matters, and not the least important of these has been the introduction of compulsory arbitration by the Munitions of War Act, 1915.

The problem of compulsory arbitration has been much discussed in this country, and on the whole both labour and capital are strongly opposed to it. Its actual introduction as an emergency measure, marks a new stage in the controversy. The stress of war, and a patriotic desire to serve the national cause, has disposed both employers and workers to accept the arbitrary ruling of the State in matters affecting their interests. But such a disposition may disappear when national need no longer calls for an obvious and active self-sacrifice. It would be unwise to maintain a system of compulsion whilst both sides continue to regard it with more or less active dislike. Indeed, it would be impossible to do so without the consent of the majority of those concerned.

Arbitration, whether voluntary or compulsory, is subject to the same limitations in the industrial as in the international sphere. Whilst it may be adopted satisfactorily to determine matters of fact, questions of principle are beyond its scope. The interpretation of an existing contract is obviously matter for arbitration. Questions of wages and hours of work, though more difficult to determine, are also subjects for arbitration. They involve decisions

as to material advantages, which can be expressed objectively in terms of money or time. It is generally possible to arrange a compromise between the two parties. But when disputes occur concerning principles there can be little hope of compromise. The principle must either be accepted or rejected, and if the difference between the two parties is too great for one to give way, it is almost impossible to avert strife. For example, the struggle over Trade Union recognition is more bitter on both sides than one over a change in wages. No arbitrator can decide the matter satisfactorily. It cannot be expressed objectively : it is a matter of the attitude and will. We have already pointed out that questions of principle, especially in connection with the control of workshop conditions, may be expected to play a larger part in industrial unrest. Only with great difficulty could such questions be settled by arbitration, and the only method of securing a satisfactory state of industrial peace on matters of principle is to bring about an agreement between the parties concerned. It will no doubt involve such a modification of the industrial organisation as will be generally acceptable to either of the interested parties either as regards the distribution of the products of industry or the control of conditions in the workshops. Some of the demands put forward by the workers we have already considered, and others we shall have to consider in putting forward our recommendations. Here it may be enough to point out that the community as a whole is a third party to every dispute. It is, perhaps, impossible to find any arrangement that will wholly satisfy the desires of both employers and workers as such, but what is more important is that the decisions of our industrial organisation shall appeal to the sense of reasonableness of the community as a whole. No group of employers or workers can long defy the general public opinion.

(3) *The Industrial Council.* This Council was established in the year 1911, and is still in existence. It consists of twenty-six members and a chairman. Thirteen members represent employers, and thirteen represent labour. The chief industries in the country are thus represented equally on both sides, and Sir George Askwith was appointed Chairman of the Council, with the title of Chief Industrial Commissioner.

The reasons and occasion for the establishment of the Council

are given in the following statement issued by the Board of Trade, dated 10th October, 1911—

“ His Majesty’s Government have recently had under consideration the best means of strengthening and improving the existing official machinery for settling and for shortening industrial disputes by which the general public are adversely affected. With this end in view, consultations have recently taken place between the Prime Minister and the President of the Board of Trade, and a number of representative employers and workmen specially conversant with the principal staple industries of the country and with the various methods adopted in those industries for the preservation of peaceful relations between employers and employed.

“ Following on these consultations, and after consideration of the whole question, the President of the Board of Trade, on behalf of His Majesty’s Government, has established an Industrial Council representative of employers and workmen. The Council has been established for the purpose of considering and of inquiring into matters referred to them affecting trade disputes; and especially of taking suitable action in regard to any dispute referred to them affecting the principal trades of the country, or likely to cause disagreements involving the ancillary trades, or which the parties before or after the breaking out of a dispute are themselves unable to settle.

“ In taking this course the Government do not desire to interfere with but rather to encourage and to foster such voluntary methods or agreements as are now in force, or are likely to be adopted for the prevention of stoppage of work or for the settlement of disputes. But it is thought desirable that the operations of the Board of Trade in the discharge of their duties under the Conciliation Act, 1896, should be supplemented and strengthened, and that effective means should be available for referring such difficulties as may arise in a trade to investigation, conciliation, or arbitration, as the case may be.

“ The Council will not have any compulsory powers.”

Then follows a list of the first members appointed. Although the Council has been in existence since 1911, its services have not been utilised to any great extent. This is somewhat surprising seeing with what high hopes its establishment was welcomed.

(4) *Profit-sharing and Co-partnership.* Attempts to re-arrange

industrial relationship so as to prevent friction have been made in the form of profit-sharing and co-partnership. Under these schemes which should be carefully distinguished from productive co-operation (the aim of which is to eliminate the employer altogether), the ordinary relations between employers and workers are maintained, but the latter are given a share in the net profits. In some cases profit-sharing has been successful, but in its present form it would be best regarded as an experiment in industrial method, and is not likely to be a definitive solution of the problems of industrial unrest as long as labour is opposed to it. Many workers feel that it has often been introduced to stimulate the zeal of the employees whilst only giving them a small portion of the returns from their increased output; that it is, in fact, a device to obtain extra production at comparatively small cost. There is also the serious objection that profit-sharing tends to weaken Trade Unionism and the solidarity of labour. Without their Unions, workers feel that they are at a disadvantage when dealing with their employers. Anything which tends to weaken the Unions naturally cannot meet with the support of the workpeople. The practice which is sometimes adopted of deferring the payment of profits to workpeople, and the conditions which are often imposed upon them that they shall cease to be members of any Trade Union, or remain with the companies for long terms, and refrain from strikes upon penalty of forfeiting their shares, are interpreted by the workpeople as expressing a desire to weaken their power of attack and of resistance to the demands of their employers. Where men are striving for the control of their own lives and not merely for a little more remuneration, such conditions are not likely to be tolerated.

The existing systems of profit-sharing and co-partnership hardly meet the claims of labour for a share in the control of industry. It is true that in many cases the workers' shares of the profits are left with the company until the amount of a share in the company has been saved, and that the owners then become ordinary shareholders. The proportion of shares held by the workers, however, is so small that they can exercise but little influence in the company. In many cases, indeed, the power of such worker-shareholders is expressly limited. In the few instances in which they have the right to appoint a certain member of the Directors, the proportion of such Directors is too small to be able to effect much

difference in the management. No matter what arrangements are made, the effective control of the industry remains in the hands of the employers.

(5) *Co-operation.* As an ideal, the organisation of industry under a system of Co-operation presents a very attractive picture. Co-operation, as taught by Maurice and Owen, would result in a system wherein perfect justice was meted out to the industrial community. At the time when the Industrial and Provident Partnership Act in the middle of last century recognised Co-operative Societies, high hopes were entertained as to the future of the movement. But almost contemporaneously Limited Liability trading came into operation, and those who adopted this policy were for the most part experienced business men who knew the value of the skilled organiser. Hence, since the ablest entrepreneur and abundant supplies of capital were available for the one system, whilst Co-operators relied upon and were unable to attract capital in sufficient amounts for the bigger enterprises, the result has been that for the most part Co-operation has not been successfully applied to production, although it has been successful in the distributive trades, and in supplying these trades by the establishment of the Wholesale Societies. When Co-operators realise the causes of their partial success, a further development may become possible. Ideally, this method of organisation has so much to recommend it that its success is to be desired. Six decades are a short period in industrial history. Experience in trading and in organising the smaller industries may in time lead to bigger things being successfully attempted. Healthy progress has been, and is being, made. Nor is there any reason why Co-operation should not become during the present century a much more important feature in our industrial and commercial life.

#### C.—RECOMMENDATIONS

The work of this Committee has been carried through under abnormal conditions. The war has not only very materially changed the national outlook, but has brought within the range of practical politics an industrial reorganisation for which many people had hoped, but apparently in vain.

To a great extent the advent of peace will usher in a period of reconstruction, and in the industrial sphere there is the possibility

of making a new departure. Further, the necessity for revising our methods of production has been emphasised again and again by the events of the past two years, and the manufacture of munitions of war has made it plain that parts of our industrial system require readjustment.

Facts and opinions have been submitted to this Committee which it is not easy in the comparatively short time available to consider adequately. Nevertheless, it has been possible to draw up the following recommendations which it is hoped may prove helpful in the solution of the greatest industrial problem that has ever faced a nation. Other problems of great magnitude have arisen from time to time, but never before has a great industrial opportunity stood out so clearly, demanding decisions that must be made without hesitation or undue delay.

The aim of this investigation has been to discover certain general principles which must underlie a harmonious economic organisation. Before the problems of industrial unrest can be solved, these principles must be applied to particular industries. With their special application this Committee has not dealt, and the following recommendations include only broad principles capable of wide application. They may be divided into groups according as they concern—

- (1) The general attitude and outlook of employers and workmen.
- (2) The machinery for dealing with disputes.
- (3) The organisation of industry.
- (4) Post-war arrangements.

#### 1.—THE GENERAL ATTITUDE AND OUTLOOK OF EMPLOYERS AND WORKERS

(i) That there should be frankness on both sides and that both employers and workers should discuss industrial matters together, or through duly accredited representatives.

The need for frank discussion of the problems which lead to industrial friction has been pointed out by almost all who have submitted opinions to this Committee. Much of the suspicion with which the different parties regard each other is due to ignorance. The separation of employers and workmen in ordinary life has led to a wide divergence in their ideals and points of view. Class consciousness exists amongst both, and the effect of this can only

be mitigated by greater contact with each other and by free discussion of matters affecting both. Only thus can they come to understand each other, and such an understanding is the first essential to a solution of the problems of industrial unrest. For this purpose it is desirable that they shall meet, not only when they have differences to settle and when disputes have already arisen, but also to consider general problems of industrial organisation which affect the interests of both: that their joint conferences shall not always be of a negative character, but also, and to a much greater extent than hitherto, positive and constructive. At the present time they meet for the most part as opponents, and this is hardly conducive to mutual understanding. Conferences of employers and employed in particular firms and in industries as a whole might with advantage be made a regular feature of industrial life. It would lead to a better understanding between Capital and Labour if employers were to lay before the men they employ all the information possible concerning the industry in which they are both working, *information that both parties are entitled to know should be freely available to both.* The lack of such information tends to intensify suspicion and uneasiness.

The dawn of Peace will bring with it many industrial problems that will demand urgent solution. It is important that we should be prepared as a nation to meet the new situation; for the emergency not only affords an opportunity for workers and employers to commence their constructive conferences, but imposes upon them a duty to consider together matters which for the most part rest in their hands and which are so vital to the welfare of the nation as a whole.

(ii) That employers should consider the collective cost of labour and not the total amount of wages earned by the workman each week.

It has often been pointed out that the cheapest labour is usually the best paid labour; and this has not only been emphasised by economists, but demonstrated in actual practice by employers themselves. It is desirable that this should be recognised by all employers. It is admittedly the function of the latter to lessen the cost of production as much as possible; and labour is an important item in this cost. On the other hand, it must be remembered that the welfare of the workers engaged is more important than

the cheapening of production, and that this should not take place at the expense of the wages—the real wages—of labour, that these wages, indeed, should be gradually raised as far as possible. The cost of labour, however, can be lowered without lowering wages, either time or piece rates, by making the best of it. The possibility of this depends to a great extent upon the removal of the restrictions upon output imposed by the workers themselves. These restrictions, as we have shown in a previous section, are unsound economically; but they are due, at any rate partly, to the attitude of those employers who look at the amount of wages a man receives rather than at the cost of the labour involved in the production of each commodity. With a change in this attitude, we might reasonably expect the workers to give up their restrictions. Some employers have long recognised this, and are rather pleased than otherwise if their men draw high wages at the end of the week. *It must be said, however, that the majority of employers still adopt the narrow attitude described, and it is necessary for the majority to change before we can hope for a change in the policy of Trade Unions.*

(iii) That the fundamental facts and principles of Economics should be known by both employers and employed.

A better understanding of each other's problems and a change in the attitude of each party towards the problems of industry depend upon improved education. Most important is a good general education, and, in addition, it is desirable that all concerned shall obtain a training in Economics. Those who belong to the employing class should be encouraged to study the principles underlying industry and commerce, and facilities should be given for the working classes to study social and economic science. We believe that serious study, honestly undertaken with a desire for truth, will be of incalculable advantage, not in the industrial sphere alone, but in the life of the community as a whole. Knowledge of Economics would modify the tendency towards class war on both sides; there is really a greater identity of interests than divergence.

## 2.—MACHINERY FOR DEALING WITH DISPUTES

(i) That workers and employers in each industry should extend and improve their organisations with a view to determining jointly the conditions under which the special industry should be carried on.

In connection with the perfecting of Employers' Associations

and Workpeople's Unions, the suggestion has been made that membership of these should be compulsory on all those engaged in the trades thus organised. This raises some very difficult issues. Where is compulsion to stop? Should we not run the risk of making our system too rigid? Would the superficial uniformity thus obtained be gained at the expense of elasticity?

Careful consideration suggests that, at any rate for the present, a wiser solution would be that—

(a) The State should recognise approved Associations of Employers and Trade Unions.

(b) When these organisations in any given trade have come to an agreement as to wages, hours, conditions of employment, and certain other points, the whole trade in the district affected, both employers and employed, should be bound under *penalty* to work in accordance with the agreements.

If this were done, both individual employers and workmen would have freedom of action as to joining the Association or Union controlling their special industry. But all those who wished to take part in that industry in the district affected by agreements made between recognised Associations and Unions would be compelled to work in accordance with the agreements, and this would effectually prevent *blacklegging* on either side.

Interest and not legal compulsion would thus induce all to join their trade organisations, and the many serious problems raised by compulsion would be avoided.

(ii) That in each industry permanent joint boards or committees should be set up to consider all matters of common interest to both employers and employed.

In a previous section we have pointed out the value of the permanent as against the *ad hoc* joint board. These boards, to be successful, should be entirely representative of the industry or locality concerned, and they can only be so if appointed by organisations which include the majority of persons in the trade. Their existence involves the mutual recognition by each other of the rights of Employers' Associations and Trade Unions. We have already suggested that these committees would be more valuable if they included in their functions something more than the mere settlement of disputes, and it is desirable that they should meet to consider important problems concerning the organisation of

the industry. It may be objected by employers that this is admitting labour to a position of equality with themselves. But it should be remembered that both are parties to a co-operative act. Their functions may be different in kind, but in degree there is neither inferiority nor superiority.

(iii) That there should be a National Joint Board, composed of representatives of employers and workers, to which the local and industrial joint boards should refer disputes which they have been unable to settle.

A Joint Committee of elected leaders would, for reasons we have already indicated, be a better body as a Court of Appeal than any department of the Government or a board appointed by the State. A Joint Committee was actually appointed by the Government in 1911, under the title of The Industrial Council,<sup>1</sup> but although still in existence, its services have not been utilised. We consider it highly desirable that this Council should be reorganised, that the members should be elected by the representative organisations of employers and workers, and that binding force should be given to their decisions.

(iv) That both employers and workmen should be absolutely loyal to the decisions and agreements made by their organisations.

### 3.—THE ORGANISATION OF INDUSTRY

(i) *That the necessity for co-operation between employers and employed be frankly recognised by both parties.*

We have already pointed out that the functions of Capital and Labour in industry are interdependent. Neither can effect anything without the help of the other, and both are further dependent upon the factor of enterprise and organisation. The permanent welfare of industry can only be insured by full and harmonious co-operation. Anything which tends to lessen the amount of capital available for industry, or to lower the quality and quantity of labour, or to remove the stimulus to enterprise and organisation, can only have a detrimental effect on industry, and will injure the efficiency of the other factors. The reward of all parties concerned can only come out of the finished products of industry, and anything which diminishes the amount of these products diminishes the amount which is divisible amongst the agents in production.

<sup>1</sup> Cf. p. 36.

The restrictions imposed by their own organisations upon the output of workers are a case in point. There is a limit beyond which it is economically unwise to work, because the physical effect upon the workers is such that their total output is diminished. It is essential from the point of view of the welfare of industry, that workpeople shall not be over-fatigued by their work, and that they shall have sufficient leisure between their periods of work to recuperate fully. This work-limit needs to be determined by observation and experiment; at present it is far too little known and considered. To restrict output within this limit is detrimental to industry.<sup>1</sup> It is our opinion that workers should modify their policy of restricting output and that employers should refrain from excessive speeding up. It should be possible to obtain in many industries a standard working day and a standard speed for machinery which would be a rough indication of the point at which the industry would attain its maximum long-period efficiency. Such standards should be recognised by the associations of employers and workpeople. These arrangements could best be applied to industries which are highly organised and in which employment is regular. In industries where gluts of work alternate with periods of slackness, and where work is not standardised, the problem presents more difficulties, and the first essential is to organise the industry so as to decasualise it, as far as possible.

To show that the output of industry depends upon the co-operation of the various agents of production is not enough. The great problem of how the joint product shall be shared amongst those who contribute to industry still remains; and the willing co-operation which we have shown to be desirable can only be secured if the different parties concerned are satisfied with their share of the product.

(ii) Suggestions have been made that this Committee should frame recommendations on the subject of a minimum wage, and the fixing of the rate of interest on capital utilised in industry. We do not, however, feel ourselves called upon to do this. The conditions in different trades and districts are so varied that it would not be possible to make hard and fast rules on either point. The

<sup>1</sup> So long as the physique and well-being of the operative is not adversely affected, present conditions demand the greatest production possible, and any other restriction is ultimately disadvantageous to labour.

local or central joint boards, which we suggest should be organised on a definite system, would have all the facts before them, and would be in a position to decide these as well as other matters affecting the detailed working of individual trades.

(iii) The co-operation between workpeople and managers should go further than the mere distribution of the products of industry. The carrying out of the processes of production, as we have seen, involves a series of co-operative actions which can be accomplished best if the parties concerned work together with full confidence in each other. This spirit can be attained only if all those engaged in industry feel that they have some share in determining the conditions under which the work is carried on. At the present time these arrangements are made by the managers, and if the workpeople are not satisfied with them, they may attempt to force concessions by withholding their labour.

How far is it possible for the workpeople to take part in the organisation? With such things as the marketing of products, labour is only indirectly concerned, but with others (e.g., workshop arrangements and the speed of machinery) it is directly concerned. Those functions of organisation which are concerned with bringing together the different factors in production, determining the proportions of these factors in any enterprise, and bringing the product to the consumers, must remain in the hands of the managers. It is important that the most capable persons shall have the management, and the best way of securing this is to leave the system of free enterprise as it exists to-day.

Variations in the demand for an article, or in the price of raw materials, may involve changes in the kind of machinery, the proportion of machinery used in relation to other factors, and so on. These are questions which are dependent on the judgment of those who are responsible for the higher management, and must, therefore, remain under their control.

(iv) There are other branches of organisation concerned with the detailed working of factories which might be carried out by co-operation between the workers and the management. They are functions which, in a large factory, are sometimes delegated to works managers and foremen, and concern the precise arrangements as to hours of work, rest periods, working shifts, speed of machinery, the sub-division and grading of labour, discipline, etc. These matters might be

determined with the assistance of a committee of workers who know the conditions existing in the factory. Such arrangements could not be left entirely in the hands of the workpeople without any conditions as to output. A certain minimum output would have to be fixed for each workshop so controlled, and it would be to the interests of the industry and all those engaged in it to increase this output as much as possible. Such a committee would be able to guard against excessive speeding up, and would remove one of the main causes to which restriction of output is attributed. Industry would be likely to gain, not only from the removal of these restrictions, but also from the more willing co-operation of the workers and the possible saving in the cost of supervision. It is reasonable to expect that fewer foremen and supervisors would be required.

(v) We have assumed so far a condition of industry in which the organisation is stable or subject to slight and gradual changes. It is necessary, however, to take account of the improvements which are constantly being made in the technique of industry, and which may result in such considerable changes in the processes of manufacture that its organisation has to be changed considerably.

When a manufacturing firm introduces new labour-saving machinery or a new process which diminishes the amount of labour required for a given operation, an interesting economic situation is created.

The interested parties may be affected as follows—

(1) THE EMPLOYER has adopted the machine or process with the aim of decreasing cost of production, but he seldom expects to keep the whole benefit of this for himself or his shareholders. Usually, he hopes by being able to reduce *prices*, to compete to better advantage, and thus increase the demand for his goods, which, again, may lead to decreased cost in production.

In order to introduce the machine or process with as little friction as possible, certain workmen will be selected and offered higher wages to undertake the new work; and these arrangements are made as quietly as possible in order to minimise the possibility of friction.

Thus the effect to the employer, generally speaking, may be—

(a) Decreased cost of production.

(b) Lower prices and increased demand for the special commodity manufactured, and hence reduced overhead charges.

(c) Less labour employed, but that labour may receive somewhat higher pay.

(d) Increased profit—but not the initial maximum, as that in the long run would not produce the final possible maximum.

(2) THE WORKER. *First Effects.* A certain proportion may receive an advance in wages and probably work with less exertion. Some labour is displaced. This may be utilised in other departments, but at first there will probably be loss of employment for some of those previously engaged. Thus, to this extent there may be some hardship to labour occasioned by the new method.

Workers may attempt by lessening the output to increase the amount of labour required under the new conditions—this, if persevered in (as it is in many cases), occasions an all-round loss, especially to labour itself, in the long run. Should the new machines be automatic, or semi-automatic, there will be required a few skilled workers for setting, and then semi-skilled or unskilled workers to attend to the machines. The effect of this may be that—

(a) So far as the work in question is concerned, a few highly skilled workers will be required to work with a number of unskilled.

(b) The designing and making of the machines may require increased numbers of highly skilled machine makers.

(c) It raises the serious question as to what extent repetition work may tend to lower the standard of skill among workers. For it is clearly a waste of labour to employ highly skilled men to watch machines that can be tended equally well by less highly trained labour. And in this connection both employers and workers should seriously consider, among other things, what the introduction into this country of new equipment may mean to the skill of our industrial army.

Is it necessary or possible to take measures to preserve the old skilled trades?

Is it practical politics to attempt this under modern conditions?

If not, we have a serious problem to face, and this should be made clear to *all parties concerned* in all its bearings.

RECOMMENDATIONS as to the policy to pursue when new machines or processes are available which will lessen the amount of labour required for a given operation—

(1) That the employers should make a forecast as to the exact effect of the new methods, this to include—

- (a) The gross financial benefit.
- (b) The saving in labour employed on present output.
- (c) Possible increased demand consequent on a certain decrease in price.
- (d) The amount of new capital required to finance the change.
- (e) The eventual effect on the labour employed.

(2) That this forecast should be considered by both the employers or their representatives and by the workers affected or their representatives.

(3) That an arrangement be agreed upon, equitable in the long run to all parties concerned, with due regard to the fact that—

- (a) Capital takes all the financial risk of the new methods; but
- (b) has hitherto had the advantages of any immediate gain.
- (c) Labour, at the outset, may be diminished in numbers employed, though eventually a new process results in the employment of more labour, and probably in the preservation of the industry. Thus, there may be an immediate and serious loss to part of the labour hitherto employed.

(d) Some labour may benefit immediately (*i.e.*, if increased pay be given to those working the new method).

(e) Labour is employed in designing and making the machine.

(4) Consider to what extent temporarily displaced labour can or ought to be compensated by means of unemployment insurance or by a percentage of the increased product.

When considering this subject, it should be remembered that the new machinery or process may be operated by a new company, established either at home or abroad, to compete with firms already in the trade, and that, if this new company be successful, both Capital and Labour working under the old conditions will be affected. There would, thus, be some difficulty in arranging a scheme of compensation, except that labour, if the industry enjoy unemployment insurance benefits, would be indirectly compensated.

(vi) It will be obvious that in the foregoing recommendations we have had in mind manufacturing industries which are highly organised, where production is more or less standardised, and employment regular. The arrangements we have suggested

would not be so easy of application to industries concerned with transport, or to industries where the workers are widely scattered. It is just as important, however, that the principle of co-operation should be adopted in these industries, even if its application has to be varied to meet the different conditions. In a railway company, for instance, it should be possible to establish a joint committee of the representatives of the workers and managers to determine the conditions of work, and deal with all matters of difference between the workers' unions and the management.

To summarise briefly what we suggest for the improvement of existing industrial organisation—

*Employers* should be organised into—

- (a) Associations of one trade in a given district.
- (b) National Association of one trade.
- (c) Local Federations of trades.
- (d) National Federations of trades.

Of these, (b) and (d) would be organised under a system of representation.

*Workpeople* should have unions and federations corresponding to those of the employers, and in both cases the National Federations should be carefully organised councils enjoying a large measure of authority, tempered by the necessity to win and preserve the confidence of their electors.

From these two representative bodies there could be elected an Industrial Council as a Court of Appeal, representative of the whole industrial activity of the country. So far as these various bodies were approved by the State they would enjoy far-reaching powers.

Approval by the State should depend on the observance of moderation and the working in conformity with carefully devised regulations. For the State in this matter would be the representative of the consumer and of the national interest. Under this system, workpeople would enjoy all the advantages aimed at by the extreme party such as the Syndicalist, but the dangers and risks inseparable from a revolutionary policy would be avoided.

#### 4.—POST-WAR ARRANGEMENTS

(1) *Demobilisation.* This may cause an immense amount of friction unless it be very carefully organised. For instance, if the

men be released from the colours gradually, those who are freed first would secure the pick of the vacancies in industry. There is also the problem of the semi-skilled and unskilled men and women who have secured a new wage-earning status during the war. A further problem will be how to deal with partially disabled members of the forces, finding them suitable occupations, with, possibly, a minimum rate of pay.

During the war, the man at the bench has helped almost as much as the man behind the gun. Many men have severed their connection with a firm for whom they may have worked for a long period in order to do munitions work. Thus many problems will arise as soon as the war ends and demobilisation commences.

It is recommended that without unnecessary delay there be established District Boards of really practical men—the majority consisting of employers and workmen who know the facts; and it shall be the duty of these Boards to consider the various problems and have power to deal with each case as it arises, their special work being to supervise the reinstatement in industry of *those who have left their employment either to fight or to make munitions*.

(2) As to Special Agreements which will end with the war. The Government, in arranging terms with the Unions as to the withdrawal of restrictions, the dilution of labour, and other similar points, guaranteed that at the end of the war all these concessions should automatically cease. Thus, superficially, there is no question as to what must happen. Nevertheless, there are certain new conditions that require stating.

Many factories have been re-equipped with new types of tools and machinery, and to these the old conditions of work do not, at any rate in their entirety, apply.

This gives the industrial world an opportunity to overhaul its methods and organisation, and make a new agreement as to wages, conditions of employment, etc. Workpeople have something substantial to bargain with—and if employers act wisely a great advance may result.

There will be a period of considerable anxiety to all parties when peace is made. It is possible that for a time at least international demand may be very great, and industries may be prosperous. But there must be taken into account the possibility of greatly increased international competition. If we can utilise our

new equipment to the full, there need not be undue pessimism as to our ability to compete. The need will be for employers and workpeople to reconsider old agreements, and arrange, on terms acceptable to both, for increased output, if there be increased demand. One of our labour correspondents, writing on the possibility of a shortage of work after the war, says that "in that case all workers should be put upon short time. They are entitled to it after working so much overtime during the war"—and he adds that there ought to be systematic arrangements made to prevent over-production.

(3) In view of what may occur industrially and commercially when peace is declared, it is suggested that some of the most experienced business men in the country should, by means of their special facilities for obtaining information as to markets, supplies of raw materials, and financial conditions, make a forecast as to what may be expected both in home and foreign trade. That when this forecast has been thoroughly considered and, as far as possible, tested, it be submitted to the representatives of labour, who in turn shall look at the forecast from their point of view, and that then both parties shall meet and endeavour to agree on a policy to meet whatever is anticipated—either (a) increased or decreased business, (b) less or keener competition in the markets, (c) the sharing of gains or the meeting of losses.

#### NOTE BY MR. SIDNEY BALL<sup>1</sup>

The Report of the Committee does not go beyond the suggestion of improvements within the existing industrial system. But any movement that aims at far-reaching economic reform must be seen to involve something further and deeper than modifications of the system that exists: it involves a change in the system itself—the introduction of a new spirit and a new method into industry. The ultimate causes of industrial unrest are rooted in an industrial system of which the ruling motive is the idea of private gain rather than that of public service. In this respect there seems little to choose—except so far as the conflicting forces are unequally weighted—between the individualism of the "profit-maker" and the individualism of the wage-earner. Both are infected by the

<sup>1</sup> Mr. Howard Heaton wishes to express his agreement with the substance of this Note.

same spirit and the same outlook: and the result is that the industrial system is, in effect, a system of private warfare, and is as demoralised as it is demoralising. No rules for equalising the conditions of combat will alter its character: they may even intensify it. The Trades Dispute Act is just as symptomatic of such a condition of things as any less legalised "device" of capitalism. So far from industry being organised for the attainment of the common good, it is organised merely for attack or defence—and the community as a whole is equally the prey of militant capital and militant labour: it becomes less and less a master in its own house.

The Committee desires to substitute for the method of conflict the method of co-operation, for the idea of class war the idea of the solidarity of interests. But how is the new wine to be put into the old bottles? The process presupposes much more than any change of method: it presupposes (as is indeed indicated) a change in the whole spirit and conception of industry. But that, again, involves much more than the "moralisation" of the employer or of the workman. The new spirit, if it is to have any effect on the economic world, must be provided with appropriate and *relevant* machinery for its purpose; otherwise it will be a soul without a body. This new spirit may be described in general terms as a socialistic spirit, in the sense that it starts from the idea of trade and industry as carried on for the common and public good. It is futile to suppose that such a spirit can penetrate or transform a system which is worked and organised on the opposite principle. The only way in which any genuine economic transformation can be effected is by making the State, or the community organised as a whole, a partner—and in principle at least, the predominant partner—in industry. If this means in effect State control, it does not mean State management: it does not mean, that is, that industry should be managed by a State department; it does not involve any change in *personnel*, though it does involve a change in *status*. The idea of syndicalism—so far as it stands for industrial democracy or for the administrative self-government of professions and trades—must be recognised: industries can only be "managed" from within. The *rôle* of the State is rather what Aristotle would have called "architectonic": it has to ensure that the industry is conducted as much in the interest of the community as a whole as in the interest of those concerned in the industry. *From a public*

*point of view*, these interests are fundamentally identical. It is clearly the interest of the community to encourage initiative and enterprise: it is equally its interest not merely to protect but to develop the status and opportunities of labour—as is evidenced by that form of State control which is already exercised in the safeguarding of a “minimum” of wages, hours, sanitation, and education: and clearly, in its own interest, it will have to go much further. For this purpose, the kind of organisation within the industry advocated by the Committee is a necessary and indispensable step—more particularly the suggestion that effect should be given to joint agreements between organised employers and organised workmen by legislative enactment. But this is not enough: it might end (witness the history of the Bedstead Alliance) in an exploitation of the community by groups of producers. The State must be a third party to any agreement.

I cannot do more in this note than indicate the general principle: the form which the partnership of the State would take must vary both in kind and degree. The “vital” industries should be nationalised or quasi-nationalised: which, again, does not mean that they should be managed by State departments—they must be self-managed but State-regulated. The presupposition of such industrial nationalisation would be the reorganisation of business and agriculture upon the lines of national “trusts”—to quote a writer in *The Times*, “on the lines of syndication upon a national scale, and with extreme publicity and public participation.” It is only when industry is organised on these lines—the lines of public or quasi-public as against private, of large scale as against small industry, that it becomes possible to provide equally for the claims of management and the claims of labour, to secure for the workman that status in an industrial democracy to which he is entitled as a citizen, and to give any meaning or reality to the “dignity of labour.” It is only when it is organised on national lines that it becomes possible to “standardise” industry. To a comprehensive view, the future belongs neither to the prophets of individualism nor to what is generally understood by State socialism. The next phase belongs to social reorganisation, and that will take a corporate form and character, and be sustained and controlled by public supervision.

This will doubtless involve political as well as economic changes;

and can only be worked out by steps and stages. But the main thing is a change in the outlook for all concerned—the trader, the workman, and the community. If we have any conception of national or imperial purpose, industry must be regarded as not simply a concern of buyers and sellers, whether of commodities or (still less) of labour, but of public polity and national welfare; it cannot be regarded as an *imperium in imperio*: its policy must be considered from and subordinated to a national and imperial policy as a whole. The form and degree of the State's participation in industry is a matter for detailed investigation; what is immediately wanted is an urgent and comprehensive assertion of the principle, and a resolute application of it to the practice and conduct of industry in detail. These views, which I have long held, may be summed up in the conviction that a genuine nationalism or imperialism and a genuine socialism, properly understood, are different aspects of the same thing; divided they are condemned to sterility, united they will lay the foundation of a genuine and healthy organism. And it is only by their union that the problem of combining unity and efficiency with the freedom and responsibility of groups or individuals can be secured. But (as I write) these views have been given prominence in a possibly significant quarter, and in a form to which I should, with some qualifications, subscribe. In a series of letters to *The Times* on "The Elements of Reconstruction," it is argued that "the ruling idea to adopt in a national policy, the idea about which the rest of our policy can be built as a body is built upon a backbone, is the idea of national syndication, the idea of grouping and amalgamating our industries, our food supply, and our labour organisation, upon a national scale; that only upon these lines can we hope to make our industries scientific and progressive, defeat foreign competition, and ensure a satisfactory home food supply, and come to an understanding and keep the peace with labour, and that the alternative to such a reconstruction boldly and openly planned and carried through is decadence and Imperial disintegration." This may sound, and indeed is, a big idea: but it is a big idea that is wanted. Only we must be careful that it is not too big (as it may very well be in the form I have quoted) to be compatible with the rights and liberties both of individuals and of nations. This is not, however, the occasion for developing the international aspect of the question.

## BRITISH ASSOCIATION SECTION F

## COMMITTEE OF INDUSTRIAL HARMONY

*Statement of Number of Disputes, Causes and Treatment, 1900-1915*

Year.	Wages.	Number of Disputes due to—				Total.	No. in which action taken by Bd. of Trade.	No. of Cases in which Stoppage avoided.
		Hours,	Employment of Persons.	Working Arrangements.	Trade Union Principles.			
1900	438	6	93	57	45	5	643	8
1	402	29	84	79	38	6	642	13
2	267	20	58	64	29	1	442	11
3	232	17	54	56	25	0	387	9
4	233	13	46	47	15	1	355	8
5	235	14	47	37	21	2	358	11
6	332	13	53	52	32	2	486	12
7	384	16	88	57	50	3	601	24
8	249	14	54	43	29	7	399	36
9	256	27	63	44	31	8	436	33
1910	302	22	80	75	41	9	531	40
11	576	31	140	66	79	10	903	35
12	539	27	149	50	70	15	857	39
13	982	49	236	73	133	12	1,497	46
14	495	24	133	30	77	—	999	99
15	424	8	65	11	46	—	674	—

*Disputes settled by Conciliation and Arbitration, 1910-14*

Year.	Total Disputes.	Number Settled by Conciliation.	Number Settled by Arbitration.	Number Settled outside Act.			By other Voluntary Machinery.
				Total.	By Trade Boards.	By General Federation of Trade Unions, etc.	
1910	531	34	29	15	44	14	28
11	908	70	22	32	60	13	43
12	857	76	23	22	77	13	52
13	1,497	127	23	27	123	12	84
14	999	58	28	23	63	14	

*Voluntary Permanent Conciliation and Arbitration Boards and Standing Joint Committees.*

Year.	No. which took action.	No. of cases referred to them.	No. of cases settled by the Boards or Committees.	No. of cases settled by umpires appointed by Boards or Committees.		No. of cases in which stoppage of work occurred.
				No. of cases settled by Boards or Committees.	No. of cases settled by umpires appointed by Boards or Committees.	
1910	109	1,971	788	299	289	14
11	126	4,543	3,259	289	233	13
12	164	3,083	1,905	2,283	1,905	16
13	195	4,070			2,283	31
14						

## CHAPTER III

### REPLACEMENT OF MEN BY WOMEN IN INDUSTRY DURING THE WAR

#### INTRODUCTION

At the time of last year's report, many industrial phenomena which are now of great interest were only in their initial stages. In 1914 and the early part of 1915, the situation as regards an increased demand for women's labour was ill-defined and in many respects apparently chaotic. Since our last report was written, the activities of the Ministry of Munitions of War have developed, and this was followed early in the summer of 1916 by schemes for the "dilution of labour."

The inquiry into the functions being performed by women in industry has, therefore, been continued by the following Research Committee—

Archdeacon Cunningham, D.D., F.B.A.; Professors Chapman, Gonner, Hobhouse, and Kirkaldy; Messrs. W. J. Davis, J.P., J. St. G. Heath, Egbert Jackson; and Miss Ashley. *Chairman*, Professor W. R. Scott, F.B.A.; *Secretary*, Mr. James Cunnison, M.A.

The investigation was carried out by local Committees working in London, Birmingham, Glasgow, and Newcastle-on-Tyne. The exigencies of the times have subjected the work of investigation to exceptional difficulties. It was particularly troublesome to obtain efficient investigators, and, when found, to retain them till their work was completed. This Committee was thus very fortunate in securing as its secretary, Mr. James Cunnison, who, as an official at Woodbrooke Settlement, Birmingham, enjoys special advantages for an inquiry of this nature.

Professor Scott organised the inquiry in Glasgow, and it was carried out by Miss Mellor, with the help of an extremely able body of investigators, among whom the Committee are especially grateful for help given by Messrs. J. E. and H. E. R. Highton. In Newcastle-on-Tyne, Professor Hallsworth enlisted the local Economics Society and its able Secretary (Mr. Halliday); and Miss Ashley, Miss Enfield, and Mr. Cunnison continued the work commenced last year in Birmingham and London.

The reports from these local committees were collated, and the general report written by the Secretary and approved by the Chairman. The time required for printing and binding did not permit of the incorporation of some suggestions from members of the Committee, who were away from home when the proofs were circulated.

Our special thanks are due to numerous employers, workers, Trade Union officials, and others, who, in spite of extreme pressure, have most courteously answered questions and rendered valuable assistance, thus enabling the Committee to supply in the following chapter a reasoned view as to several of the phenomena which have arisen in the industrial sphere.

## GENERAL REPORT

### I

Over half-a-million women have been added to the ranks of labour between the outbreak of war and the spring of 1916. Other changes, more important than the mere addition to numbers, have also taken place. Alterations in demand and the shortage of men have brought about transferences of women from process to process and from industry to industry, with the result that over half-a-million women are now directly replacing men. Most of this replacement has come about during the second year of the war.

#### A. THE EMPLOYMENT OF WOMEN DURING THE WAR

It is now possible (July, 1916) to mark certain definite stages in the course of women's employment since August, 1914.

In the first two or three months of war, the loss of enemy markets, the lack of raw materials, the closing of the North Sea and the Baltic, and the sudden, if short-lived, reduction in consumption on the part of the public, were causes which, coming in rapid succession, brought about a severe industrial depression, involving most industries, but chiefly those employing female labour in greater proportion than male. By September, just under a quarter of a million women had lost employment in "industrial" occupations.

The position of male labour soon began to improve, partly on account of rapid recruiting, partly on account of the Government demand for materials of war. As early as October, 1914, the

reduction of male employment as compared with July was practically balanced by the number of enlistments; and henceforward, industry continued to absorb a greater and greater proportion of the civil male population. In November, 1914, a shortage of skilled labour was experienced; and, in spite of the substitution of females, the introduction of new methods and machinery, and the recalling of skilled labour from the Forces to the shops, this shortage is still serious in many industries.

The position of the women did not improve so quickly, and it was not till April, 1915, that the figures for female employment reached the pre-war level.<sup>1</sup> Three sets of circumstances, however, have come to their aid. The first was the Government demand for great quantities of Army clothing, food, leather, etc. which brought about a re-absorption of something like 130,000 women into industry between September and December, 1914. These goods are the products of industries, in which female labour normally preponderates.

The second circumstance was the demand for munitions; and women began to flow rapidly into the metal trades. By February, 1915, only 1·5<sup>2</sup> out of every hundred women who had been employed in July, 1914, were without work, and overtime among women began to be common.<sup>3</sup> So far, however, the absorption of women was easy, as the processes they entered did not differ greatly from those to which they were normally accustomed. The phenomenon of the performance by women of work that was previously confined to men had not attained significant proportions.

The third stage is marked by the growing demand, made both publicly by representatives of the Government and privately by employers, that women should undertake men's work. As early as December, 1914, the engineering employers, faced with the difficulty of keeping up their output, approached the Unions asking for a relaxation of their rules with regard to the employment of female labour, and certain other matters. On 8th February, Mr. H. J. Tennant asked the Labour Party in the House of Commons to secure the relaxation of Trade Union rules. During February and March, the Committee on Production issued a series of reports, including the "Shells and Fuses" Report, in which

<sup>1</sup> See Table I, p. 66.

<sup>2</sup> *Ibid.*

<sup>3</sup> *Ibid.*

it recommended that there should be an extension of the practice of employing female labour on shells and fuses, under suitable and proper conditions. This was followed in March by the "Shells and Fuses Agreement," in which the recommendations of the report were accepted by the Amalgamated Society of Engineers. Then came the "Treasury Agreement" containing conditions relative to the employment of female labour. June saw the passing of the Munitions Act and the establishment of the Ministry of Munitions. From this time onward, the problem of the Ministry was to secure sufficient skilled men for the enormous output of guns and shells, and for staffing the proposed new Government establishments. The dilution of skilled labour by unskilled seemed the only solution; and the Ministry of Munitions, aided by the National Labour Advisory Committee (on which the Engineering Unions were represented) began a serious attempt at organising the whole labour resources of the nation. Agreements began to be drawn up here and there between the men's Unions and the employers' Associations setting out the conditions on which women might be taken on to do the work of men.<sup>1</sup>

All these measures, combined with the patriotic feelings of the women, produced their effect, though not with great rapidity. Even by August, 1915, the entry of women into trades and occupations hitherto reserved wholly or partially to men had "only just begun to assume any appreciable magnitude."<sup>2</sup> Since then, the movement has accelerated. Dilution of labour has been hastened by the recommendations of minimum rates for women who take the place of men in munition works. Those recommendations, first issued by the Central Labour Supply Committee in October, 1915, were embodied in Circular L 2, and were, on the last day of the year, agreed to by the Prime Minister and the Minister of Munitions, in a meeting with the A.S.E. National Conference, as the condition of co-operation in dilution by the Trade Unions. The general power to fix minimum wages for women doing munition work in establishments of a certain class was granted to the Minister of Munitions in the Munitions of War (Amendment) Act, 1916.

By the beginning of 1916, practically the whole of the easily

<sup>1</sup> See p. 94.

<sup>2</sup> *Credit, Industry, and the War* (Ed. Kirkaldy), p. 70.

available reserve of female labour had been drained, and scarcity of women began to be reported in many industries, particularly in those which, in ordinary times, are the special field of women's employment.<sup>1</sup> The attraction of skilled women from their own occupations into munitions is one aspect of the position which should cause serious concern.

During the present year, both the Home Office and the Board of Trade have had the scarcity of women in mind. In March, a Central Advisory Committee on Women's War Employment was appointed to give advice on the extended employment of women; and the two Departments have issued a series of leaflets drawing the attention of employers in certain industries to processes in which, and methods by which, temporary substitution of women for enlisted men is already being successfully carried out in their trade.<sup>2</sup>

The state of employment of women at various dates since the outbreak of war is shown on Table I.<sup>3</sup>

#### B. STATISTICAL COMPARISONS

1. THE INCREASE IN THE EMPLOYMENT OF WOMEN.—In July, 1914, the number of occupied women in the United Kingdom, as estimated from Board of Trade returns, was 5,020,000. In mid-April, 1916, the number had risen to 5,490,000. In twenty-one months of war, therefore, the number of occupied women had increased by 470,000.

The obvious question arises how this figure compares with the normal change in the number of occupied women in peace times.

<sup>1</sup> This scarcity still continues (July, 1916) in spite of the increasing number of women noted in the Labour Exchange monthly returns as "Registered during the period" and "still on register at end of period." In each month of 1916 the *Labour Gazette* has reported great shortages of skilled men and of domestic servants, textile workers, dressmakers, etc. These two facts taken together point to (a) lack of geographical and industrial mobility on the part of women; and (b) desire of the women for the higher-paid munition work.

<sup>2</sup> At the time of writing the effects of the calling up of the later Derby groups, and of unattested men under the Military Service Acts, had not had time to make themselves felt.

<sup>3</sup> See next page.

TABLE I  
 STATE OF EMPLOYMENT AT VARIOUS DATES SINCE THE OUTBREAK OF WAR, COMPARED WITH STATE OF  
 EMPLOYMENT IN JULY, 1914  
 "Industrial" Employment only. (Numbers employed July, 1914 = 100.)

FEMALES.

	Sept., 1914.	Oct., 1914.	Dec., 1914.	Feb., 1915.	Oct., 1915.	Dec., 1915.	Feb., 1916.	April, 1916.
Contraction ( - ) or Expansion (+) in Numbers								
employed	- 8.4	- 6.2	- 3.2	- 1.5	+ 7.4	+ 9.2	+ 10.9	+ 13.2
On overtime	- 2.1	- 5.9	- 10.8	- 10.9	- 13.9	- 14.5	- 12.8	-
On short time	36.0	26.0	19.4	12.6	5.6	6.1	4.6	-

The following information on this point is extracted from the Census Reports for the United Kingdom, 1901 and 1911—

	1901.	1911. <sup>1</sup>
Number of occupied females, 10 years of age and over . . . .	5,309,960	5,851,849 <sup>2</sup>

This shows an increase in 1901–1911 of 541,889 or 10.2 per cent. On this basis, the normal increase in occupied women between July, 1914, and mid-April, 1916, would have been 94,830, instead of the actual advance of 470,000.

This comparison seems to suggest a phenomenally rapid industrial recruitment of women during the war. The increase, however, is not all due to the recruitment of new female workers. Probably fewer women have married; certainly fewer women have retired from industry on marriage; and former workers, who had retired from industry on marriage, have returned for the period of the war.

The normal increase of occupied females in peace times is not, of course, proportionately distributed over all industries. If we make, first, a broad distinction between "industrial" and "non-industrial" occupations, we get the following results for the last inter-censal period—

	1901.	1911.	Increase.
Number of occupied females 10 years of age and over: { "Non-industrial" . . . .	2,700,448	2,836,062	5.0%
"Industrial" . . . .	2,609,512	3,015,787	15.5%
Total . . . .	5,309,960	5,851,849	10.2%

On this basis, the advance in the number of women in "non-industrial" occupations since the beginning of the war would have

<sup>1</sup> Note, however, that the proportion of the female population now occupied is less than it was in 1861. The following figures show the number per million women of 10 years and over (England and Wales) who were unoccupied, from 1861 onwards: 1861, 628,400; 1871, 623,500; 1881, 659,500; 1891, 655,800; 1901, 683,700; and 1911, 674,900. In the years 1901 to 1911 the unoccupied proportion of the female population had fallen, but not so low as in any previous census year since 1861.

<sup>2</sup> The Census figure for occupied females in 1911 is greater than the Board of Trade figure for July, 1914. This is due to the fact that the Board of Trade returns do not (as the Census figures do) include employers and those working on their own account. Comparison between the 1914 and 1916 figures is legitimate, since both are calculated on the same adequate basis. But comparison should not be made between the figures given for 1914 and 1911.

been 24,850 and in "industrial" occupations 59,132. The actual advance has been—

		July, 1914.	April, 1916.	Increase.
Number of occupied females:	" Non-industrial "	2,840,000	3,022,000	182,000
	" Industrial "	2,180,000	2,468,000	288,000
Total		5,020,000	5,490,000	470,000

Further, in the last inter-censal period, while the numbers of occupied females showed an increase in most groups of industry, they showed an actual decrease in domestic services, agriculture, and clothing. The decline in domestic services and in agriculture has continued during the war, the former from 1,695,000 in July, 1914, to 1,593,000 in April, 1916; and the latter<sup>1</sup> from 160,000 to 134,000 for the same dates. But in clothing trades, a fresh influx is apparent, due, of course, to Government orders; and, on the other hand, there is a decline in the number of females occupied in the printing and allied trades, caused by a decreased demand for labour consequent on the restricted supply of paper, and by the general slackness of the publishing trade.

In all other groups of industry there has been an increase in the number of occupied females since July, 1914; and in some cases the increase has been very great. The outstanding cases in "non-industrial" occupations are banking and finance,<sup>2</sup> which shows an increase of 242.7 per cent., and transport with 168.7 per cent. In "industrial" occupations, the advance is less remarkable. The metal group has, of course, attracted the greatest number, and shows an increase of 88 per cent.; and into chemicals there has naturally been a flow of female labour, the present figures standing at 84 per cent. above the 1914 figure. But the other categories are relatively low, the next in order being the "Wood" group, with an increase of 33.8 per cent. For all "industrial" occupations taken together, the advance is only 13.2 per cent.

<sup>1</sup> But a comparison of the numbers in Agriculture in April, 1914, and April, 1916 (made possible since the above was written), shows an *increase* of about 37,000 in the two years.

<sup>2</sup> See Table, p. 70.

The conclusions to be drawn from the above comparisons are these—

(a) The increase in the number of occupied females between July, 1914, and April, 1916, is about five times the normal peace-time increase.

(b) But this accelerated rate of increase is not due entirely to women entering industry for the first time. Many women have, on being married, continued in industry; and many married women, widows, and single women have returned to industry for the period of the war.

(c) A distinction drawn between “non-industrial” and “industrial” occupations shows that into the former there has been a relatively greater influx of women than into the latter—especially into banking, and transport (including railway and tramway services). Among the industrial occupations, on the other hand, the most noteworthy cases are the metal trades and chemicals.

2. THE REPLACEMENT OF MEN BY WOMEN.—It is estimated (April, 1916) that 523,000 women<sup>1</sup> are now directly replacing men; and that 737,000 women are replacing the men either directly or indirectly.<sup>2</sup> This has involved changes in the relative numbers of men and women engaged in different industries.

Even in normal times, such changes have taken place to a noticeable degree. A comparative study of the figures in a series of Census reports shows the extent of these changes over the last fifty years. In most groups of industries, women have been increasing relatively to men; but, in a few, the proportion of men to women has risen, in some cases very remarkably. Of the following two tables, Table II includes all the groups which, in 1911, attracted a relatively greater number of women than they did fifty years ago; and Table III, those which were losing their attraction for women as compared with men. The figures are based on the number of males and of females of 10 years of age and over (England and Wales) engaged in the different groups of occupations.

<sup>1</sup> There is no contradiction between this figure and the figure 470,000 given on page 62, as the net increase in the number of employed women since the beginning of the war. As will be shown later, women have been transferred from women's normal occupations to men's work.

<sup>2</sup> For an explanation of what is involved in “indirect replacement,” see below, p. 73.

TABLE II<sup>1</sup>

(Showing groups in which the proportion of women to men has increased.  
 To be read as in the following examples: 1861, Government, m : f, 21-26  
 means that there were 21-26 men to each woman employed.)

Occupation.		1861.	1871.	1881.	1891.	1901.	1911.
Government . . .	m : f	21-6	15-61	13-05	8-62	6-48	5-44
Professional . . .	m : f	1-46	1-28	1-23	1-09	1-06	1-07
Commercial . . .	m : f	61-94	52-31	36-28	19-01	8-86	5-23
Mines and Quarries . .	m : f	262-60	60-46	68-5	101-49	160-04	188-91
Precious Metals . . .	m : f	8-88	8-96	6-97	7-00	7-14	6-05
Wood . . . .	m : f	10-71	8-21	8-84	8-70	9-47	8-40
Chemicals . . . .	m : f	15-53	12-14	8-10	5-38	3-82	3-42
Leather, Skins, etc. . .	m : f	6-43	5-20	4-26	3-83	3-17	2-76
Textiles . . . .	f : m	1-08	1-20	1-27	1-27	1-35	1-30
Food . . . .	m : f	4-45	4-36	3-79	2-82	2-86	2-01

TABLE III

(Showing groups in which the proportion of women to men decreased between 1861 and 1911.)

Occupation.		1861.	1871.	1881.	1891.	1901.	1911.
Domestic . . . .	f : m	13-45	13-48	13-27	11-77	9-37	7-21
Transport . . . .	m : f	42-29	40-10	71-11	67-62	66-38	46-30
Agriculture . . . .	m : f	22-42	22-69	20-07	24-20	29-72	33-14
Metals . . . .	m : f	15-60	18-84	20-51	20-19	19-07	15-81
Paper & Printing . . .	f : m	3-92	3-70	2-78	2-47	2-07	1-86
Dress . . . .	m : f	1-45	1-58	1-75	1-76	1-72	1-72

It should be noticed, however, that the interval 1901-1911 does not, in a few cases, carry on the general tendency to be seen in the longer period. For example, in the "Professional" group, while the proportion of men to women decreased between 1861 and 1911, it increased slightly between 1901 and 1911. Similar phenomena are to be seen in "Mines and Quarries, Textiles, and Transport," etc.

The above tables show that the Domestic, Transport, Agriculture, Metals, Paper and Printing, and Dress groups of occupations were,

<sup>1</sup> The figures in this and the next Table, for the years 1861 to 1911, are taken from the useful compilation, "A Comparative Study of the Occupations of Men and Women," by D. Haynes (*Women's Industrial News*).

in 1911, to a greater degree men's trades than they were in 1861.<sup>1</sup> Into all the other groups, women have been entering in numbers relatively greater as compared with men. It is not possible to carry on this statistical comparison into 1916, as, in the only figures available for the present year, the grouping of occupations is somewhat different from the grouping in the Census returns, on which the above figures are based. But the weight of the evidence at our disposal leads us to believe that in all groups of occupations, with the possible exception of printing, the number of women to each man has increased (or men to women decreased) since the beginning of the war. In most cases, the increased proportion of women in industries, as may be seen from a glance at the above tables, is simply a continuation (or acceleration) of a tendency already in process before the war. But in some cases the change has been remarkably abrupt, noticeably in the Precious Metals trades (which are now, to a great extent, turning out munitions and other military accessories), and in Commerce.

In normal times, such changes in the proportions of men and women in any industry may be due to various causes—

(a) To an increase in the demand for goods in the production of which women are employed in greater numbers than men.

(b) To changes in the character and organisation of an industry, bringing with them a change in processes and a greater demand for unskilled labour.

(c) To the invasion of a new field of industry by women and the consequent displacement of men.

Since the outbreak of war, all three of these causes have been at work; but in the engineering and metal industries, at least, stress should be laid on the second cause. An account will be

<sup>1</sup> The tables do not show whether the different groups of industries declined, or improved, or remained constant over the period; but the following figures show the proportion of men to women in *all* occupations for the same series of years—

	1861.	1871.	1881.	1891.	1901.	1911.
M : F.	1.93	2.19	2.28	2.23	2.43	2.37

given later<sup>1</sup> of the nature of the changes that have taken place in these and other industries.

The following table, which has already been referred to, shows the number of women, in different industries, who are performing work in substitution of men's work, and the number directly replacing men. (*See next page.*)

## II. THE ECONOMIC IMPORTANCE OF THE SITUATION

The situation is abnormal. There is a temporary demand for certain articles in unusual quantities, and a temporary withdrawal of large numbers of men on whom the production of those articles normally depends. Hence the increase in women workers. Whether this increase will prove a purely temporary phenomenon, which will cease with the passing of abnormal circumstances, or whether the new experiences of the time will leave their legacy in an increased female industrial population (with all the problems that will involve) depends on various interacting forces. The disabilities of women which, in the past, have prevented their taking the same place in industry as men may be briefly summed up thus—

(a) *Physical.* Women have, in the past, been believed to be capable of performing only the lighter kinds of work.

(b) *Educational.* Women have not had the necessary training to fit them for industry.

(c) *Industrial.* Trade Unions have, in the majority of cases, opposed the entrance of women into skilled trades.

(d) *Social.* There is the tradition that women should not do "men's work"; and the fact that, in many cases, their domestic ties prevent their engaging in such.

If women in the future are to play a greater part in industry, one of two things must happen: either they must fit themselves, by training and in other ways, for industry as it is; or industry must be so reorganised as to meet women at their level.

From the present inquiry, which shows, to some extent, the nature of the work of women who are replacing men, it is possible to see whether either of these changes has been stimulated by war conditions.

<sup>1</sup> See p. 75 ff.

TABLE IV<sup>1</sup>

Occupations Group.	Estimated Industrial Population, July, 1914.		Increase Decrease Females in Dec., 1915.	Estimated No. of Females on work in substitution of Mabs' work, Dec., 1915.	Estimated No. of Females on work in substitution of Mabs' work, April, 1916.	Number of Women directly replacing men, Dec., 1915. April, 1916.
	Males.	Females.				
Building	967,000	7,000	+ 3,600	+ 6,400	6,100	8,800
Mines and Quarries	1,220,000	9,000	+ 800	+ 2,300	2,700	4,400
Metal Trades	1,642,000	144,000	+ 71,700	+ 126,900	70,300	117,400
Chemical Trades	160,000	40,000	+ 19,400	+ 33,600	9,600	16,200
Textile Trades	608,000	851,000	+ 29,700	+ 27,800	57,600	73,400
Clothing Trades	286,000	654,000	+ 6,700	+ 11,700	30,400	42,300
Food Trades	350,000	170,000	+ 31,700	+ 30,900	29,500	35,000
Paper and Printing Trades	301,000	169,000	—	—	900	22,500
Wood Trades	282,000	39,000	+ 7,400	+ 13,200	11,400	23,600
Other Trades	444,000	96,000	+ 25,400	+ 35,700	27,000	37,400
All "Industrial" Occupations	6,300,000	2,180,000	+ 196,500	+ 287,500	267,100	375,900
Commercial	1,057,000	474,500	—	+ 181,000	—	189,000
Professional	174,000	68,500	—	+ 13,000	—	16,000
Banking and Finance	179,000	9,500	—	+ 23,000	—	25,000
Public Entertainments	181,000	172,000	—	+ 14,000	—	32,000
Agriculture	—	—	—	—	—	—
Transport	1,032,000	9,500	—	+ 16,000	—	18,000
Civil Service	231,000	63,000	—	+ 29,000	—	31,000
Arsenals, Dockyards, etc.	71,000	2,000	—	+ 13,000	—	13,000
Local Government (incl. Teachers)	477,000	184,000	—	+ 21,000	—	37,000
Domestic Service	—	—	—	—	—	—
Totals for "Non-Industrial" Occupations	—	—	—	—	—	—
Totals for all Occupations	3,402,000	983,000	—	+ 310,000	—	361,000
	9,702,000	3,163,000	—	+ 597,500	—	736,900

<sup>1</sup> The figures in this table relate to employed persons only, and do not include employers or those working on their own account. The women reckoned under Professional occupations are mainly the clerks of Professional people (e.g., Solicitors and Accountants). Other clerks are reckoned under the headings Commercial, Transport, etc.

#### A. THE NATURE OF WOMEN'S OCCUPATIONS.

Of the women now engaged in wage-earning occupations, about one in every seven is directly or indirectly replacing a man. Something like six out of every seven are engaged on normal women's work.

1. WOMEN AT PRESENT ENGAGED IN NORMAL FEMALE OCCUPATIONS.—Such a statement as the above obscures the important fact of an enormous amount of redistribution of women within their own occupations.

To begin with, the individual woman, though still doing what is generally considered women's work, has, in many cases, left her own industry and entered another. Of this fact, we have plenty of evidence in the reports from employers all over the country. There is a scarcity of women for textiles, for dressmaking, and domestic service, and for the smaller non-munition metal industries; and printing, though the fact has been obscured by the falling off in the trade, has actually suffered a reduction in the number of women occupied in all capacities.

Such transferences have caused a deterioration in the quality of labour available for many occupations. Skilled women, for example, have left laundry work; and to fill the vacancies, char-women and shop assistants, sometimes professing themselves skilled in the work they seek, have been engaged.<sup>1</sup> The same difficulty has been met with in textiles<sup>2</sup> and in other industries. Such transferences are uneconomical, not only because they mean bad work at present, but because where a woman's skill lies, as it does so often, in her deftness of touch, she may lose it altogether in the heavier work to which she has sometimes transferred herself.

In other cases, shortage of experienced women in the prime of life has been met by the engagement of young girls fresh from school,<sup>3</sup> whom employers prefer as being quicker learners, and as requiring a lower wage.

In the next place, within industries, women have been transferred from one process or department to another. Usually this is due to the voluntary action of the employer, who has tried to meet the emergency by a redistribution of work among his existing employees.

<sup>1</sup> See Report on Laundries, p. 206.

<sup>2</sup> See Glasgow Report, p. 165.

<sup>3</sup> See Laundries, p. 206.

In Tailoring (London), "more women are employed on certain processes in which they were engaged before the war (*e.g.*, in gents' waistcoats and trousers), on which they do all the work except pressing and fitting up."

Single women have taken the place of married women, and married of single. The Jute trade (Dundee) is, in normal times, recruited mainly from married women, whose wages are the largest item in the family income. During the war, the financial position of some of these women, on account of Army separation allowances, is better than it has ever been. The women have refused to go into the mills, and their places were for some time taken by fisher girls from the North of Scotland. In other cases, married women who had retired from industry have returned to fill the places vacated by younger girls tempted into munition works by higher wages.

A few cases have been noted in which the war has simply accelerated a process of substitution of women for men, which was already in progress before the war. On some railways,<sup>1</sup> women, before the war, were engaged as booking-clerks and carriage-cleaners; during the war they have entered these occupations in greater numbers. In Tailoring<sup>2</sup> (London), the process of substituting a woman plus a machine for a man was already going on, and has simply been hastened. In Jewellery, women working on processes on which they were engaged before the war, are, however, working now on a much wider range of articles.

The conclusion from this survey is that, though a large proportion of the women now in industry are still working in women's normal occupations, various alterations in the *personnel* of labour, more or less significant, have taken place. Of these, the most significant is the loss of skilled women and the consequent deterioration of the quality of labour in some industries.

**2. WOMEN NOW ENGAGED ON MEN'S WORK.**—There are certain cases in which women are taking up the exact work which the men have left. Women are acting as 'bus and tram conductors, taxi-drivers, ticket collectors on the railways, and postmen. These cases happen to be open to public view; they are obviously simple, direct replacement; and they give the impression that women generally have stepped into the men's places. Within "industry"

<sup>1</sup> See Report on Transport. p. 196,

<sup>2</sup> See Report, p. 192.

proper, however, the degrees of replacement are many; and, economically, the degree of replacement is important as bearing on the position of female labour after the war.

(a) *Direct and Indirect Replacement.* Women are taking the place of men, in the proportion of one to one, in many unskilled jobs, such as sweeping yards and counting bricks, and on some of the simpler machines. In other cases, a certain number of men are replaced by a greater number of women, each of whom is doing part of a man's job. These are both cases of direct replacement. But we have found that in the printing trade, in chemical manufacturing, in some heavy metal work, and in other cases, the woman often replaces not a man, but a boy or a youth, who, in turn, moves up into the man's place. This is indirect replacement. From the employer's point of view, this would seem to be the easier kind. For one thing, it meets with less opposition from some Trade Unions than direct replacement. Women, whose industrial career is usually short, are encouraged by some Trade Unions to replace youths as "readers" to compositors in the printing trade, as that work frequently proves a "blind-alley" to the boy. And, in a few instances, indirect replacement seems to have been adopted by the employer in order to evade wages difficulties.

(b) *Complete or Partial Replacement.* A more important question, however, is how far women are completely and how far only partially replacing men. Examples of both are to be found; but to decide to which class any particular case belongs is difficult. A woman may appear to be exactly filling a man's place: she may be engaged on the same piece of work; she may be turning out the same result; and yet the operations she performs may be very different from those performed by the man she replaces. For the introduction of women itself has necessitated changes in machinery and subdivision of processes. Complex operations performed by a skilled man have been reduced to a series of routine operations performed by one or more women.

Another difficulty which arises in this connection is the more theoretical one of the definition of such terms as skilled, semi-skilled, and unskilled. We are confident that the constantly repeated statement that women are engaged on skilled work, (which, in most cases, means something different from what would appear at first sight), has led to much misunderstanding on the

question of the kind of work on which women are now engaged. In fact, it is just at this point that the really serious labour problem arises, to which war conditions have given birth. It is therefore of importance to attempt to make the matter clear.

The distinction between skilled and unskilled is to be met with in most industries; but the threefold distinction of skilled, semi-skilled, and unskilled seems to be almost confined to the engineering trades.<sup>1</sup> To the worker in this industry, the terms refer to different classes of work rather than to a difference of ability or capacity on the part of the worker, who might be hard put to it to point out the essential differences of each class; in fact, the practice varies in different districts, and a process called "skilled" on the Clyde might be called "semi-skilled" elsewhere. But an examination of the work contained under each reveals certain characteristics which may be used as the basis of a theoretical distinction.

The essential difference is that, what is called "skilled" work involves continued judgment and adaptability in the use and application of a number of tools, in operations which vary both in character and in the metal to which they are applied, and which are capable of being performed by different methods. But to become master of his tools to this extent, and to use them with judgment and intelligence, the man requires long training and experience. And hence follows the second difference, that for what is usually called skilled work, an apprenticeship (varying from five to seven years) is considered necessary; whereas for semi-skilled and unskilled work, it is not. General turning and fitting fall into the skilled category.

Operations which are usually classed as semi-skilled cover a much wider range, those at the upper limit merging into skilled work and those at the lower into definitely unskilled. But it is true that, although the man on semi-skilled work may still exercise considerable control, less judgment and adaptability are required, and the work is, therefore, more quickly learned. In general, he tends his tools rather than controls them. The periods of training necessary for semi-skilled work are, therefore, shorter than for skilled, but they vary greatly for different operations.

<sup>1</sup> For a description of the use of the terms "skilled," "semi-skilled," and "unskilled" in Engineering in the Glasgow district, we are indebted to Messrs. J. E. and H. E. R. Highton.

The boundary of distinction between semi-skilled and unskilled is much more rugged and almost incapable of delineation; but, in the latter, little judgment and adaptability are required, as the same limited range of operations is repeated continually. The worker is primarily a machine tender, rather than a tool user; and, in general, the period of training required is relatively short.

Now, when the terms "skilled" and "semi-skilled" are applied to the work being done by women in the present exceptional times, it must be obvious that they do not imply the same judgment, training, and experience on the part of the woman as they did on the part of the man she has replaced. And the explanation lies in this: in the course of a day's work, the skilled man has frequently to perform certain operations which make a small call on his experience and judgment. And to meet the present emergency, certain of these simpler operations have been "broken out" from the skilled man's work, and the woman has been put to perform them. She is then said to be doing "skilled work"; but the terms "skilled" and "semi-skilled" so applied mean, in nearly all cases, repetition work on the simpler processes which hitherto formed only the less important part of the skilled or semi-skilled man's work.

(i) *Complete Replacement of Men by Women. (Skilled Work.)* As was to be expected, in view of the above explanation, the instances in which women are found to be completely replacing men on skilled work, at least in engineering, are few and far between. In other industries, women are found, in a few cases, to be doing work which is termed skilled. A few women compositors are employed in the Printing trade. In some firms, women are replacing men who, in other firms, are said to be absolutely indispensable on account of their skill. Such cases have been found in "cutting" in leather goods manufacture and also in certain dress manufactures, but they are rare. Even in "non-industrial" occupations, similar results emerge. In clerical work, only a few instances were discovered in which women are doing highly specialised or technical work;<sup>1</sup> and the arrangement is definitely stated to be only temporary, and the girls are said to complete less work than the men.

<sup>1</sup> See Clerical Report, p. 202.

This lack of instances, of course, is no proof that under different conditions women would be incapable of performing the skilled man's work. Women have not had the long training of men and, since the war started, there has been no opportunity for them to acquire the necessary experience even had they desired it. Many Trade Unions also object to the introduction of women to skilled work; and the women have been sought for, and have received high wages in, repetition work.

When women are said to be doing "skilled" work then, what is meant in nearly all cases is that they are doing one part of the job which a skilled man performs throughout. But this is partial replacement, and will be alluded to later.

(*Semi-skilled and Unskilled Work.*) Where women are found to be completely replacing men, in the proportion of one to one, the work done is, in nearly every case, semi-skilled or unskilled; and much more frequently the latter. The report on Engineering<sup>1</sup> in Glasgow refers to some cases in which women were doing semi-skilled work in which the processes had not been in any way changed. In industries outside engineering, women are occasionally found on work which involves some training and judgment;<sup>2</sup> and in "non-industrial" occupations, the same is true to a greater extent. Some of the clerical work which women have taken over from men demands chiefly a good general education and experience in those branches of clerical work to which women are accustomed.

The lighter kinds of what is commonly called unskilled work are those in which women are usually to be found *completely* replacing men. In engineering, women are doing "light labouring and unskilled work"; in other metal works, "unskilled labour"; in chemical manufacturing, women are replacing "unskilled men, filling sacks"; in baking, "sweeping up, feeding and drawing travelling ovens." In "non-industrial" occupations, women are acting as car and railway carriage-cleaners, as postmen, and on the less technical kinds of clerical work. In some cities, women have been employed in street-cleaning, waste-paper sorting, etc.<sup>3</sup> In some exceptional cases, women are doing really heavy labouring. On the Scottish railways, for example, there are female porters.

<sup>1</sup> See p. 99. <sup>2</sup> See Reports on Leather, p. 194, and Printing, pp. 168, 184, 186. <sup>3</sup> See Report on Public Services, p. 211.

Most of them are women who have long been accustomed to the heavy work of agriculture and fishing, and even they are said to find the strain too great.

To sum up, it would seem that the cases in which women are completely replacing men in the sense that each woman is doing the same work and the whole of the work that the men did, are, for the most part, confined to the lighter unskilled tasks.

(ii) *Partial Replacement of Men.* A large proportion of the replacement of men by women has been made possible by some re-arrangement of methods which brings the operation within the capacity of the female worker. But this reorganisation means that the woman is not completely taking the man's place. Some men may be released, but one at least must be left to supervise several women; or, in other cases, two women may be required to do the work formerly done by one man. This simplification is brought about in various ways—

(a) A man's work may be analysed into its simpler component parts and a woman put on to perform each.

(b) The work of a highly skilled man may be sub-divided and a woman set to do the simpler, more routine operations; while the man's skill is conserved by his being engaged all the time on those operations which only he can perform.

(c) Highly automatic machinery, which makes mistakes almost impossible ("fool-proof," it is called), may be introduced in place of machinery which demanded a fair amount of mechanical knowledge and resource on the part of the operator. The automatic machinery can be worked by almost anyone after a short period of training in the use of the working parts.

These new methods and modifications of them are to be found throughout industry to-day. Outside those engineering trades which come definitely under "dilution" schemes, they are not widespread: it is only the most alert employers, or those suffering most from the scarcity of labour, who have altered arrangements to meet the modified conditions. But many employers are aware of new methods which could be introduced, and which they would introduce if they considered the increased need for women to be a permanent condition.

In the course of the inquiry, we have met with instances of

simplification of a man's work by sub-division into two or three routine processes,<sup>1</sup> and with instances of the separation of the more routine from the more difficult parts of a skilled man's work. In printing, for example,<sup>2</sup> women have been taken on to do the merely routine part of the machine-minding work, and the trained mechanic (with four to seven years' apprenticeship) now minds a greater number of machines. In other directions, modifications have been made. Simple re-arrangements of hours and shifts (*e.g.*, a break of a short time, once or twice in a long spell of work) have seemed to make all the difference between the possibility and impossibility of the employment of women. Changes in training are found in the case of some tramway services. In one city, female tram conductors are not required to learn driving also, as the men had to do.<sup>3</sup> In some industries, "united squads" of men and women are employed, the men doing the heavier and the women the lighter work, and this has sometimes necessitated the appointment of a female supervisor.

But it is in connection with the trades which come under the "dilution" schemes that the greatest amount of reorganisation has been met with. It would seem that, so far as general engineering is concerned, dilution has not yet progressed very far.<sup>4</sup> But on shell work the introduction of women in such large numbers has been made possible, partly by giving them the simpler parts of the skilled men's work, and partly by the introduction of new plant of a highly automatic kind.<sup>5</sup> It was probably for the sake of the output and not for the sake of dilution that this plant was introduced; but its introduction has made dilution possible.

By such arrangements, the partial replacement of men by women has been accomplished. For the most part, it seems clear that the woman is rarely doing the actual work that the skilled man did previously. She may be doing one simple part of it; or she may, where new plant is introduced, be doing something which no one has done before. In skilled work in engineering, the woman

<sup>1</sup> See, *e.g.*, Report on Leather Trades, p. 194, and Distributive Trades, p. 207.

<sup>2</sup> See Printing Report, p. 175. <sup>3</sup> See Report on Transport, p. 196.

<sup>4</sup> See Engineering, Glasgow, p. 99. But since the above was printed, it is reported (23rd Aug., 1916) that dilution of labour has now been established in 150 of the largest of the 300 controlled engineering and shipyard establishments on the Clyde, and 14,000 women have been brought in, most of whom are engaged in general engineering work, excluding shells.

<sup>5</sup> *Ibid.*, p. 2.

never does the identical work of the man; in semi-skilled, she sometimes does, but always under supervision.

The nature of the work done by women on shells is indicated by the fact that in Circular L 2 relating to the employment of women on munition work of a class which, prior to the war, was not recognised as women's work, it is laid down that "the period of qualification on shell work shall not, in general case, exceed three or four weeks." A practical illustration is given in one of the following reports,<sup>1</sup> where the investigator points out that "the women do the whole of the process (with one or two exceptions) from the rough shell as it leaves the hands of the forgemen to the stage where it proceeds to be filled." The facts noted by the investigator were that for this work the women receive instruction amounting to sixty or seventy hours, that no attempt is made to give any theoretical instruction of any kind, that it is repetition work, and that it requires very little judgment. "The worker must, however, be able to adjust the shell in its right position in the lathe, to manipulate the different levers, and to apply the gauges. But since the 'stops' are all arranged for her, it requires little intelligence to know when to stop applying a given tool."

At the same time, it should be pointed out here, though it will be dealt with more fully later, that in the learning of these operations—many of which, after all, are entirely new to women—they have shown a degree of attention, dexterity, and quickness which points to the possibility, given the proper advantages, of their acquiring a high degree of skill and technical expertness. More than that it is impossible to say, because the necessary conditions have not been present.

Summing up on this whole question of the extent of the replacement of men by women, it may be said that only in rare instances are women actually to be found performing the same work as was done by highly trained and specialised men. In general, the employment of females is confined to work of a repetitive or routine kind, the degree of skill necessary for which can be acquired after a short period of training. But the ability which has been shown by women on such work shows that, under different conditions, they might be able to do much more responsible work.

<sup>1</sup> See *Engineering*, Newcastle, p. 141.

## B. THE SUCCESS OF WOMEN ON MEN'S WORK.

Women, then, are replacing men in large numbers in industry, but this is due to the employer's necessity, and is not his choice. It is important to know how far the women have given satisfaction in their new spheres, and employers were, therefore, asked for their opinion of the work of women replacing men. An analysis of the answers received yields the results given below. In the first class are included those industrial qualities in which the unanimous opinion of the employers, in all the industries investigated, was that women were inferior to men; in the second class, those in which they are superior or equal to men; and in the third class, those in which the opinions of employers were divided.

### CLASS 1.

(Women are inferior to men, in the unanimous opinion of the employers investigated, in the following qualities.)

Quality.	Remarks.
Organising power .	“ Women show no signs of being able to take positions of trust.”
Interest in business Ambition.	“ Unless she has a ‘ business lineage.’ ”
Initiative .	(One exception.)
Self-reliance . .	“ Women lean too much on men in an emergency.”
Resourcefulness.	
Physical strength.	

### CLASS 2.

(Women superior or equal to men.)

Manual dexterity and deftness. In routine work. In “ cul-de-sac ” positions.	(This because of lack of ambition.)
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### CLASS 3.

(Opinions of employers divided.)

Quality.	Work in which the opinion was favourable to women. (Samples only.)	Work in which opinion unfavourable to women. (Samples only.)
“ Staying-power ”	Clerical work (Engineering firm)	Clerical work (Colliery)
Regularity	Clerical (as above) Tramways Engineering	Textiles (Glasgow) Tinplate Jute
Conscientiousness	Clerical (as above) “ Engineering	Shipping Co.) Shirt-making

Certain points in the above analysis are to be noted. Except in the case of managers in firms and banks employing lady clerks, the opinions come mainly from employers in industries such as metals, clothing, printing, leather and brush-making. Therefore, *on the whole*, they refer to a class of woman who has not received much more than the bare compulsory degree of education. The employers, moreover, in many cases, simply voice the general view, uncorrected by any accurate observation on their own part. And, again, it has to be borne in mind throughout that women have not had the same industrial training or viewed their lives from the same industrial standpoint as the men.

With these reservations, it is interesting to note that the analysis bears out the accepted view that women are lacking in the higher industrial qualities, but excel in deftness of touch and in continued application to a routine operation.

The line of division in Class 3 is worthy of notice. The favourable opinion is generally given in occupations which attract a superior type of girl; the unfavourable in those which, on the whole, are recruited from a rougher type. The remark of one clerical firm that women with a "business lineage" make the better business women might be broadened. The analysis suggests that women from the better class homes, in which regular habits are taught, are as amenable to the discipline of business and as conscientious in the performance of their work as are the men.

The line of division between the different clerical firms in Class 3 lies between those which have employed women in clerical work of some kind for a number of years and those which have taken on lady clerks for the first time since the war. The greater appreciation of the women by the former suggests that there may be a good deal in the method of selection of the girls and the organisation of their work.

The general result seems to be that, with certain quite notable exceptions, within the limits of the industries investigated, women are said to lack the higher qualities which make for commercial and industrial value, and to excel in routine work; that this is to a large extent to be accounted for by their lack of the same training as the men receive; and that the matters of conscientiousness and interest are greatly affected by education, business training, and home influence.

(a) *Output.* To give more concreteness to the comparison, an attempt was made to estimate the comparative output of men and women on the same work. The answers were vague; few of the answers given allowed for differences in comparative costs; and in many cases comparison was impossible, because of the reorganisation of industries owing to war conditions. Where men and women are working at the same processes at the same piece-rate, the actual earnings show the difference of output. In the few cases in which such evidence is forthcoming<sup>1</sup> in engineering and shell work, women's output seems to be inferior to men's; but in those cases the woman was often not much beyond the training period.

In other cases, one had to take the general estimate of employer or manager. In industrial occupations, the weight of evidence is to the effect that, where work is light or unskilled, the output of the women is equal to the men's; and where the work is repetitive, it is often greater.<sup>2</sup> Some firms have stated that the women do not restrict their output as the men do,<sup>3</sup> or that in wheeling and carrying, the women do not adopt "shop-pace"; but when work is heavier, or involves greater skill, the comparison is unfavourable to the woman.<sup>4</sup> The causes given for the difference are connected with physical strength and training.

In non-industrial occupations, women clerks, on the whole, are said to turn out less work, of the same quality, than a man. A bank manager of wide experience estimated the practical value of his lady clerks at from two-thirds to three-fourths that of the men. A shipping firm now using women on highly technical clerical work put the proportion at two women equal to one man.<sup>5</sup> Similar evidence comes from the distributive trades.

The general conclusion, based as it is on slender evidence, is to the effect that on unskilled, light, or repetitive work, women are

<sup>1</sup> Engineering, Glasgow, p. 99.

<sup>2</sup> Report on Metals, Birmingham, p. 152.

<sup>3</sup> Metals and Printing, Birmingham, p. 184.

<sup>4</sup> Printing, London, p. 168.

<sup>5</sup> But this evidence, generally, is given only in comparisons of women with men of greater experience. Where comparison of men with women of equal experience is possible (and this is only in the limited number of clerical posts occupied by women before the war), women generally are held to be equal, or, as in the case of women typists in Government offices superior to men.

superior or equal to men in output; but on heavier, more skilled work, their output is less. But many employers preferred to state that the short time women had been employed in their new capacities did not give the opportunity of making an estimate that would have any value. They believed that, with the necessary experience and training, there was no reason why women should not be as valuable producers as men; and some were enthusiastic in their appreciation of women's abilities.

(b) *Hours.* The hours which a woman may work in industry are, in general, limited by the Factory Acts, which, where they apply, make night work for women illegal, define the normal hours of the working-day, and specify the maximum amount of overtime a woman may work. But by Section 6 of the Munitions of War (Amendment) Act, 1916, the Minister of Munitions has power, with the concurrence of the Secretary of State, to modify the Factory Acts with regard to hours of women in certain classes of munitions establishments. This has been done in some cases. It should be pointed out that many workers seem to be ignorant of the extent to which this has happened, and instances have been reported of employers having taken advantage of this ignorance to exceed the legal hours in factories to which no relaxation order has been applied.

The employment of women on night work has been found to be confined almost entirely to work in shell factories and in certain other metal trades.<sup>1</sup> In general engineering, women, as a rule, work on the day shift only. In shell factories, the work is based on a two-shift system, and an attempt seems to be made, where possible, to put the women on alternate fortnights of day and night work. In other metal works, a three-shift system is sometimes in operation.

Where women are employed on the night shift, they seem usually to work the same hours as the men. Modifications (in the form of breaks in a long working spell) have been introduced, and found to conduce so much to efficiency, that they have been applied to the men also. But the general opinion, stated quite emphatically, is that women, particularly if married, do not take kindly to night work. The reason given is that the domestic work of the married

<sup>1</sup> Women were found on night work in some printing firms—an evasion of the Acts.

woman demands her attention in the day hours when she ought to be asleep. The result is that the night work of women, particularly in the last few hours of the shift, yields less output than day work.<sup>1</sup>

Outside munitions and engineering, the employment of women at night and on abnormal overtime is to be met with in occupations to which the Factory Acts do not apply. The former has been found in connection with tramways and railways, and the latter in clerical work. But here, again, the almost unanimous verdict of the employers is the same. Women do not stand night work, and the strain of overtime is too great. In tram cleaning in Glasgow, on which women are employed at night, as many women have left as have remained. On the other hand, where the Factory Acts do apply, it is frequently given as one of the chief difficulties in the way of replacing male by female labour that women are not allowed to work the same hours as men<sup>2</sup> when they themselves would be quite willing to do so. It would be well if the experience of those industries in which night work has become a temporary necessity could be made widely known. The adverse effects on output, not to mention the lowering of the health of the workers, should be a sufficient safeguard against any attempt permanently to remove the Factory Act restrictions.

Reports as to the timekeeping of the women vary. In Engineering,<sup>3</sup> the general testimony is that women are punctual in attendance and seldom off duty. In day work, their timekeeping is better than the men's; on night work, not so good. In chemical work (unskilled labouring) and on the trams the opinion is favourable. Unfavourable testimony comes chiefly from trades which draw largely on married women, like jute and other textiles; and are accompanied by remarks such as: "Married women on separation allowances only come in two or three days a week." Absences through sickness are only occasionally mentioned.

From the evidence at hand as to timekeeping, it would seem that the motives which have led extra women into industry at present are patriotism, which keeps the women steadily at work;

<sup>1</sup> The hours of women in munition works are dealt with in two memoranda of the Ministry of Munitions—"The Employment of Women" and "Hours of Labour."

<sup>2</sup> See Report on Chemicals, p. 163, and on Printing, London, p. 168.

<sup>3</sup> Reports on Engineering, Glasgow and Birmingham, pp. 99 and 152.

and the desire to add something to the family income, which, where the need is not great, may lead to bad timekeeping and general irregularity.

*Health.* A description of the effects of the extra strain of the present time on the women workers in engineering, in which the more trying conditions are most obvious, is to be found in the detailed reports which follow. The relatively rare occurrence of serious illnesses and of accidents in dangerous work shows how much improvement could still be effected in general industry if the proper precautions were taken. That the strain of long hours and strenuous exertion has not had more adverse effects is a proof rather of the temporary zeal of the woman under the desire to serve, than of her ability to continue such unwonted exertion for a long period in normal times.

### C. DIFFICULTIES IN THE WAY OF REPLACEMENT OF MEN BY WOMEN.

In cases where employers have not attempted the substitution of men by women, or having attempted it, have found it to fail, they were asked for an explanation. The answers fall into various classes.

One set of difficulties comes from the side of the women. Some processes are too highly skilled and require a longer period of training than the women have undergone. Lithographic work, the setting of music, certain processes in paper-making, and other obvious cases need scarcely be mentioned. But in such trades as the distributive, more technical knowledge is sometimes demanded than the women possess or will trouble themselves to acquire. In dress material departments, according to one large drapery firm, women do not know enough about fabrics and textures to make good saleswomen, and they will not avail themselves of the technical classes that exist for their benefit.<sup>1</sup> Again, some work is too heavy or unhealthy for women; and the moral objection is sometimes raised that the introduction of women would involve too great a mixture of the sexes. This is of great importance in cases where the organisation of the shop puts workers at the mercy of the "piece-masters."

<sup>1</sup> See Report on Distributive Trades, p. 207.

A second class of difficulties arises in connection with the Trade Union attitude to the introduction of women, which will be dealt with later; and a third in connection with factory legislation, which is mentioned above.

From the side of employers, objections are to be found chiefly in the smaller firms, and in those in which women were not employed before the war. In such cases, the expense involved in the extra cloakroom and lavatory accommodation, in training women, and in appointing lady superintendents, is a serious consideration; and, in general terms, employers frequently say that "women are more trouble than they are worth."

Among other objections that have been met with are the scarcity of women, and the dependence of women on skilled male labour which is sometimes not forthcoming.

CONCLUSIONS ON THE QUESTION OF REPLACEMENT.—(a) The majority of the women replacing men to-day are employed on unskilled work, and work of a routine or repetitive nature.

(b) In such work, women are, on the whole, as good as men as regards general output and efficiency, and in purely repetitive work often better.

(c) Where women have been engaged on more highly skilled work, they are not, so far, as satisfactory as men; but their ability to learn quickly suggests that, under improved training conditions, they might compete successfully with men where too great physical strength is not demanded.

#### D. THE INDUSTRIAL TRAINING OF WOMEN.

Reference has already been made to the fact that the inability of women to tackle the more highly skilled processes in industry is, in large measure, due to their lack of industrial training. It is doubtful whether men, if a similar call had been made on them, could have responded with much greater alacrity. Except in those few cases in which a real apprenticeship continues to exist, a man's "skill" is too often simply dexterity in a limited range of operations. Anything like an all-round training in the principles and practice of a complete branch of trade is generally wanting among men as among women; and without the training

in principles (mechanical or commercial), adaptability to new conditions is impossible, or, at best, slow.

The exigencies of war-time have raised the problem of training anew, and for immediate needs the problem is seriously tackled. The training of munition workers in technical schools throughout the country is being stimulated by the encouragement of the Ministry of Munitions in co-operation with the Board of Education and the Labour Exchanges.<sup>1</sup> In several centres, the need for women trained in other work has been met by the Education Committees. The Leeds Education Department (Higher Section) has undertaken the "training of women in boot and shoe work to enable them to replace men." Similar training is given to women in heavy leather work in other places.

Such schemes are meant to meet the urgent needs of the moment. Consequently, their aim is, in the shortest possible time, to turn out men and women fit to do some particular operation. Most of the schemes limit the training of any individual to one operation only. The Ministry of Munitions, in its memorandum, insists on the training of munition workers in the technical schools being "thoroughly practical; purely educational ideals must give place to utilitarian methods. . . . The aim of all such courses should be to impart to the worker the 'machine sense' and to teach him to use a certain definite machine tool on which he is likely to be employed in a factory"; and "the ministry is not prepared to sanction any course which provides less than thirty or more than a hundred hours of instruction."

To meet the present crisis, this is undoubtedly the only possible policy. But if we look beyond the present and anticipate the rapid changes in industrial methods which are likely to come in the next few years, the need becomes apparent, not for operators trained only to use one tool, but for men and women adaptable and mobile enough to meet new circumstances as they arise.<sup>2</sup> And up till now, little of this kind of training has existed:

<sup>1</sup> See Ministry of Munitions Memorandum: Training.—3. In Birmingham, since May, 1915, there have been 1,829 students in training for munition work under the Technical Education and Evening Schools Sub-committee, of whom 1,288 have qualified and 1,276 have been placed.

<sup>2</sup> Should the automatic machinery so extensively introduced for shell work during the war continue to be used or be extended to general engineering after the war, there will be a demand for many women now trained to manipulate it. See Report on Engineering, Glasgow, p. 99.

apprenticeship within the factory is all but dead; outside the factory we have technical schools and evening schools. But everywhere the same round of criticism is heard. The schools are inadequate; their machinery is out of date. Evening students are too fatigued to learn, and day classes are out of the question for most employees. What we must first decide is the kind of man and woman we want: whether one with particular specialised skill, or one with general intelligence and adaptability. That decided, the question of extended general education, or technical training, or some modification of apprenticeship, will be more easily settled.

But given the ideal training system, it is questionable whether it will touch the problem of women's labour except on the fringe. The fact remains that up to the present the majority of women, shaping their lives to other ends than industry, have not desired a long industrial training. And there is little evidence that the war has as yet brought much change in this respect.

#### E. SOURCES OF FEMALE LABOUR.

The women who have come into particular industries during the war were formerly single, unoccupied women; or married women, normally engaged on domestic duties; or women engaged in other occupations: and they have been drawn sometimes from narrow, sometimes from wide, geographical areas.

1. *Previous Occupation.* It would appear that most of the women have had previous occupational experience. The occupations most frequently mentioned are, in the case of those now engaged in heavy work, factory hands, mill-workers, charwomen, and domestic servants; on lighter work, shop assistants, dress-makers, and milliners. A bad kind of transference already mentioned is from skilled work, in textiles, for example, to work in which the woman is not skilled. Previously unoccupied women are to be found mainly in clerical work and munitions. Where transference has taken place, it is usually due to (a) the attraction of higher wages, which has caused difficulties in deserted industries, and raises the frequent complaint amongst employers of the "artificial attraction of munitions";<sup>1</sup> or (b) depression in the trades from which the women have come.

<sup>1</sup> See Textiles, p. 165.

2. *Geographical Source.* In most cases, the necessary supplies of women have come from the immediate neighbourhood, or a sufficient supply has not been forthcoming at all. Complaints have been met with of the inadequacy of railway service. Where large munition factories have been erected, women are drawn from a much wider area; in Birmingham, *e.g.*, there are women from as far afield as Ross-shire (in Scotland), and from Ireland. (For the Jute trade, Dundee has drawn on fisher girls from the North of Scotland.) In Glasgow, on the other hand, out of 156 women questioned on the subject, 135 came from within 10 miles of Glasgow.

3. *Social Position.* The women are, for the most part, working women or the wives of working men. The only instances of women from a superior social class are in clerical work, where daughters of professional men are to be found; and in munitions work, which has appealed to their patriotism. In some of the former cases, the women like the regularity of the hours and the feeling of independence which the salary gives them, and will desire to remain in business after the war.

4. *Civil Status.* In clerical and distributive work, most of the women are single. In some of the public services (trams, cleansing staff, etc.) most are married, and, on account of deliberate selection, the majority of these are soldiers' wives. In other industries, actual figures are not forthcoming; but fairly large numbers of married women seem to have gone into munitions, being freed from domestic work by the absence of their soldier relatives. The same cause, in the case of the Dundee jute trade, where the women no longer have their husbands to support, produced the opposite effect.

The importance of this question lies in the light it throws on post-war conditions. Is it likely that women will be in industry in greater numbers after the war? The evidence is to the effect that the women at present in industry are, for the most part, married women, or single women who were previously in occupations. Formerly unoccupied single women are relatively few. But it is unlikely that married women will want to remain (and from the social point of view their remaining would be of questionable advantage); and the previously occupied women are not additional, but only transferred. Whether, with the passing of war

conditions, the latter will return to their old occupations is chiefly a question of wages, which is discussed below.

New sources of female labour have been tapped for clerical work; and, of course, for those numerous classes of war work, such as nursing, which lie outside our survey, but to which women have gone so willingly.

#### F. WAGES.

*Rates of Wages.* Certain forces are at present in operation tending to raise the rates of wages of women in general industry.

(a) Minimum rates have been established by three Orders under the Munitions of War (Amendment) Act, 1916, for women and girls on munition work in certain classes of establishments. For women (of 18 years and over), on work that was customarily men's, a time-rate of £1 a week (based on the normal hours for the district) is established; with a time-rate equal to men's, where the work is highly skilled, and piece-rates (where women are employed on piece work) equal to men's on all classes of work. The rates for girls under 18 are lower. For women of 18 and over on work not formerly men's, the rates are 4d. an hour (piece-workers) and 4½d. (time).<sup>1</sup> In deciding whether these rates are to be considered as high or low, two things are to be remembered: First, they are a minimum; and, second, from the scarcity of women in other industries, they seem to compare very favourably with the general level of wages.<sup>2</sup>

(b) Trade Unions are fixing in agreements with employers the remuneration of women replacing men.<sup>3</sup>

(c) The wages of women outside munition works, and where Trade Union influence, or Trade Board regulations, have not made themselves felt, are left to the operation of economic laws; and general scarcity of women in normal women's trades has led to higher wages. But even where wages have risen, they have not attained the munitions minimum level, even in districts in which the competition of munitions is keenest, and in work evidently demanding about the same degree of skill and exertion. More

<sup>1</sup> For discussion of wages in engineering see "Glasgow Reports," p. 99.

<sup>2</sup> But see below.

<sup>3</sup> See below.

than that, it has been found in engineering and metals<sup>1</sup> that where two sets of women within the same shop were working one on work subject to the minimum wage conditions, the other not on such work, even although a similar amount of skill was involved, two sets of wages rates were in operation. A double standard of wages as between men and women has long been a well recognised fact of industry; but a double standard, as between one set of women and another, in contact with each other, and on work involving similar powers, is a new phenomenon. It is clear that, women being forthcoming at the lower rate, as soon as the legal enforcement of the minimum is withdrawn, there may be a considerable fall in the wages of the women affected, which will probably spread to other industries.<sup>2</sup>

(d) Apart from minimum rates, decreased supply of female labour and Trade Union action, the rise in prices since the war must, in any case, have had its effect on wages rates. The percentage increase (weighted) in the retail prices of food (including beef, mutton, bacon, fish, flour, bread, tea, sugar, milk, butter, cheese, margarine, eggs, and potatoes), between July, 1914, and 1st June, 1916, is as under<sup>3</sup>—

All Articles.	Large Towns' Population over 50,000.	Small Towns and Villages.	United Kingdom.
Weighted percentage increase . . . .	62	55	59

The above figures are for food only, and are not proportionately representative of the increase in the whole cost of living. The extent of the advance in the other items of expenditure in the working-class budget has just (8th August, 1916) been announced in the House of Commons, and is as follows—

WEIGHTED INDEX NUMBERS. (*Working-class family.*)  
(July, 1914 = 100.)

1916.	Rent.	Clothing.	Fuel & Light.	Miscellaneous.
March .	Nil	50	30	30
June . . . . ,	,	55	40	30

<sup>1</sup> See reports of Glasgow and Birmingham, pp. 99 and 152. Since these reports were written wage-rates have been established also for women on work not previously men's.

<sup>2</sup> Note, however, that in some cases the double standard has led to trouble.

<sup>3</sup> *Labour Gazette*, June, 1916, p. 197.

If food (weighted) is added, the total increase (excluding shifting of demand) was 40 per cent. at March and between 40 and 50 per cent. at June.

Taking the advance at its lower limit of 40 per cent., the munitions minimum time-rate (£1 a week) for the adult woman on man's work, is equivalent to only 14s. 3d. in 1914; and the munitions time-rate for the adult woman on woman's work (4½d. an hour) is equivalent to just under 3½d. an hour in 1914. Comparison might be made between this and the 3d. an hour fixed under the Trade Boards Act for some sweated industries.

These figures are applicable to the case of the single woman, earning and spending wholly for herself. But, in industry, the single woman of this kind is not the typical case. The working woman is often one of a family; and at the present time she is often a married woman whose husband is a soldier. If, then, we take the family as the spending group, we ought to allow for the father's absence, which makes a difference to expenditure and also to income. Family circumstances differ so greatly, that no general statement is possible; but the following case may be considered. The pre-war family of father, mother, and one child under 10 was equivalent, say, to  $2\frac{1}{4}$  consuming units, taking the father as 1, the mother as  $\frac{3}{4}$ , and the child as  $\frac{1}{2}$ ; and the family depended on the earnings of the father. To-day that family is equivalent to at least  $1\frac{1}{4}$  spending units (mother  $\frac{3}{4}$  and child  $\frac{1}{2}$ —though if the mother is at work she probably consumes more food than formerly). The father's earnings are withdrawn, but in place of them there are (a) the Army allowance for wife and child, equal to 17s. 6d.; and (b) the mother's earnings, which we may take at the munitions minimum of £1 a week. The present weekly income, therefore, of 37s. 6d. (equivalent to 26s. 9d. in 1914) will go as far, for the remaining  $1\frac{1}{4}$  units, as £2 8s. 2d. would have gone, before the war, for the  $2\frac{1}{4}$  units. In this particular case, then (ignoring possible changes in consumption and other minor items, such as the parcel of goods which the woman sends to her husband at the Front), the present reduced family is as well placed financially as the complete family was, before the war, if the father earned £2 8s. a week.

Nominal wages have risen. It is doubtful how far real wages have risen; but there is a greater correspondence between men's

and women's wages for the same work than there was before the war. On some railways and tramways, in some metal works and elsewhere, the principle of equal pay for equal work has been accepted, usually through trade union pressure, but frequently apart from any such influence.

*Earnings.* It is not possible in the present limited investigation to give a general view of the earnings of women in different industries. An account is given below<sup>1</sup> for the women in the Glasgow engineering trades. That some women in munitions are receiving phenomenally high earnings is true. Cases have been met with in the course of this investigation. That these instances (of £3, £4, and £5 a week) are at all representative of the general condition seems to be far from the fact.

But earnings are a resultant of rates multiplied by hours, or of rates multiplied by output, or of a combination of these. And it has been found that the factor of the wage rate is not always the most important determinant. High earnings are sometimes due to an expenditure of energy which is of the greatest value to the nation at the present time, but which could not be continued for long periods or under normal circumstances.<sup>2</sup>

#### G. TRADE UNIONS AND THE EMPLOYMENT OF WOMEN.

It has already been mentioned that one of the difficulties encountered by some employers in their attempts to introduce women to men's work have come through the opposition of trade unions. Detailed inquiry in many trades has shown that such opposition is by no means universal.<sup>3</sup> Some men's Unions have welcomed the women, and some Union members are enthusiastic in their appreciation of the women's work; but that there has been opposition is also undoubted. The underlying causes of this opposition, where it exists, do not fall to be discussed here. But the fact of opposition is not an isolated thing to be condemned or praised in isolation. Behind it lie long years of experience, and motives by no means wholly selfish; to ignore which is both unwise and unjust.

But the more immediate cause of such opposition, discovered from conversation with trade unionists, claims to be recorded.

<sup>1</sup> See p. 99.

<sup>2</sup> See Report on Engineering, Glasgow, p. 99.

<sup>3</sup> See Reports.

The main reasons given against the introduction of women are the following—

(a) That the introduction of women to men's work will lower men's piece-rates, since women are willing to work for lower wages.

(b) That the introduction of cheaper labour will lower the demand for men—a fear met with chiefly in trades which depend on war demand (such as leather goods), and in which a post-war depression is anticipated; and in trades in which the new automatic machinery, introduced for the first time since the war, is likely to continue or to be extended. In this case, the existence of a reserve of female labour, ready to be drawn on, will be a continual menace to the position of male labour after the war.<sup>1</sup>

(c) The physical and the moral objections, that some trades are too hard or unhealthy for women, and that mixture of the sexes is inadvisable.

That these are the most important objections is to be seen from an analysis of the clauses contained in agreements drawn up between unions of men and associations of employers for the introduction of women. Such agreements have been made in the cotton trades, woollen and worsted, hosiery, textile bleaching and dyeing, brass, printing, and many others. The most frequent clause in these agreements is one (sometimes stated generally, sometimes in great detail) which is intended to safeguard the wages rates of the men replaced; another frequent clause demands the reinstatement of the men at the end of the war; and a third limits the introduction of women to processes for which they are physically fit.

The chief argument, however, is that of wages; and the problem of so fixing the wages of women as to enable them to be employed and yet to avoid their undercutting men, is one which concerns both employer and trade unionist, and has, as yet, been solved by neither. The suggestion most frequently offered was that men and women should get equal pay for equal work. But apart from the fact that there are many processes in which the introduction of women necessitates extra supervision and technical changes in process which reduce the women's value to the employer, the policy of equal pay for equal work is not unanimously held, even by the strongest supporters of women's rights; and it is very doubtful whether the mass of women workers could ever be prevailed upon to stand out for this equality.

<sup>1</sup> See Glasgow Engineering Report, p. 99.

Another suggestion was that the difficulty could be overcome by the organisation of women. Many attempts more or less successful have been made, both before and since the war, to organise women either in separate unions of their own, or in mixed unions along with the men. With regard to their organisation in separate unions, the difficulties encountered in normal times are great enough, and they are increased under the present circumstances. In ordinary times, the main difficulty is that women seem unable to organise if left to themselves. They may come together during a dispute; but the immediate stimulus gone, they fall apart again. This is partly due to the fact that the average age of female workers is much lower than that of males: 50 per cent. of the women in industry are under 25 years of age. Further, the low economic status of the woman, her low wages, and frequently her separation from other women in the same trade militate against successful union. To these causes, there must in war time be added that many women are now avowedly in industry only temporarily and are indifferent to future conditions,<sup>1</sup> and that their wages are high<sup>2</sup> and they see no need for Trade Unions. On the other hand, the appeal made in some quarters to women to organise in order to safeguard the interests of the men has met with good response. The National Federation of Women Workers has added many women to its ranks; but, nevertheless, it remains true that no separate union of women alone (with the exception of the N.F.W.W.) is of great importance either in membership or in power.

The other alternative, the introduction of women into men's unions has difficulties of its own. Nevertheless, with the growing recognition on the part of the men that organised women are less to be feared as competitors than unorganised, more and more unions have admitted women.

In 1913, certain cotton, jute, flax, and other textile unions contained some 202,000 women members out of a total membership of 308,000; and certain other unions, including boot and shoe operatives, shop assistants, and postal and telegraph clerks, had 63,500 women out of 247,000 total membership. During the war, also, some unions have, for the first time, opened their ranks to women.<sup>3</sup> And the Amalgamated Society of Engineers, while not

<sup>1</sup> Engineering, Glasgow Report, p. 99.

<sup>2</sup> Engineering, Birmingham Report, p. 152.

<sup>3</sup> See Engineering, Birmingham, p. 152.

permitting the entrance of women to its own ranks, has by agreement encouraged the entrance of the women within its trades into the National Federation of Women Workers. Where women have not entered men's unions, the fact is due either to the belief on the part of the male unionists that female labour is only temporary, or that women should not be encouraged to be in the trade at all; or else it is due to the indifference of the women themselves, or the belief met with among female munition workers that trade unionism means restriction of output.<sup>1</sup>

But while the attitude of the men to the women at present in industry thus varies in different trades and districts, two things were met with almost universally among the men. There is a widespread fear that attempts will be made by employers after the war to get behind the guarantees on the matter of Trade Union rules and restrictions; and there is as widespread a determination to accept nothing less than the full restoration of all the privileges that have been ceded.

#### H. THE EMPLOYMENT OF WOMEN AFTER THE WAR.

Many of the circumstances on which the place of women in the industrial world after the war will depend are, at present, matters of speculation only. Whether trade will increase or decrease, and how demand will be distributed among different classes of goods, are problems, for the solution of which a considerable body of data already exists.<sup>2</sup> How far, in consequence, the employment of women will be changed in its nature and extent, depends on other circumstances which do not fall within the scope of this report. But certain questions investigated in the course of the inquiry have a bearing on the matter; and the conclusions reached may be stated in their relation to the post-war position of women.

The situation will depend on the demand for women and the supply of women.

1. *The Supply of Women.* The available supply of female labour, as compared with the pre-war supply, will be conditioned by the willingness of women to remain in or to enter into industry and their suitability for the kind of work that will be demanded of them.

On the former point, our inquiries, so far as they went, seem to

<sup>1</sup> See Engineering, Glasgow, p. 99.

<sup>2</sup> See Chapter IV.

indicate that the majority of women war workers had had previous industrial experience. The phenomenon was not so much an influx of new labour as a recalling of past workers, or a transference of present workers. When the war is over women who have been made widows, or those whose husbands return incapable of labour, may want to enter the factory or the workshop: some firms (laundries, for example) expect a greater proportion of married women after the war for some such reason. But, apart from that possibility (which cannot be calculated), it is unlikely that women who have failed to respond at the present time will be ready to come forward after the war.

It is certain, on the other hand, that a fairly large proportion of the women at present in occupations will desire to withdraw. Many women feel the strain of their present work to be too much for them, and the investigation has disclosed a great amount of loyalty among woman to the men they are replacing, and a disavowal of any intention to remain if the men want to return to their occupations. And so far as soldiers' wives and dependents have been given the preference in employment, this force will act without much friction when the men return.

There remain, however, women occupying men's positions who will wish to retain them or, at any rate, to keep some place in industry. Some formerly unoccupied women have got a taste for business life; some female conductors on tramways will not desire to return to tailoring, or other confining occupations; and many, limited as their training has been, have gained great proficiency in working a certain type of machine which may be extended in its application. If these last-named women are not actually employed after the war, they will at least form a reserve supply to be called upon at need—a position already foreseen by the men.

*2. The Demand for Women.* The most important fact in this connection is that the war conditions have not, so far, resulted in creating a large number of highly skilled women. They have resulted in the creation of a larger amount of female labour able to fill the places of men who were fairly highly skilled, but usually through the introduction of new machinery or through the sub-division of those processes. The latter change is of a kind which, once introduced, and the initial difficulties already overcome, tends to persist. We may, therefore, anticipate an extended demand

for women on sub-divided processes, and consequent falling off (to that extent) in the demand for skilled labour. The likelihood of the extension of automatic machinery to general engineering, and the consequent continuance of the demand for the services of the women now accustomed to its manipulation, are considered in the report on engineering in Glasgow which follows.<sup>1</sup>

Outside of such work as that, the general impression gained was that employers would be willing to retain women on light labouring work, but not on the heavier kind; that women would be engaged in greater numbers in clerical work, but confined to the easier and more routine branches; and that on such work as tramway conducting, the extent of their continuance (which managers are willing to contemplate) would be conditioned by the number of returning men who had been promised re-employment.

An underlying condition in almost all men's trades, however, is the satisfactory settlement of the women's question by the Trade Unions, the employers, and the women. The determination of the unions to have old conditions restored has already been noted.<sup>2</sup> One suspects, however, that with great changes in the organisation of industry, the problem will not be such a simple one as the mere reversion to the *status ante bellum*.

*Wages.* The relevant issues on the question of women's post-war wages can be briefly summarised. In a previous section, we have seen that the changes in the rates of women's wages since the war have been conditioned by the minimum wage orders for certain work and the consequent scarcity of women for other industries; by Trade Union demands, and the rise in prices. The Trade Union demand will persist in so far as women remain competitors of the men. How far it will succeed, remains to be seen. Prices, also, are an incalculable factor. But the munitions minimum will cease to have force twelve months after peace is declared, and we have seen reason to believe that the immediate result will be a drop in wages for the women still remaining in that work and, consequently, in other industries also. On the other hand, it is almost inconceivable that the women, having earned wages comparable to those of men, will be willing to return to the lower paid trades at the old rates. The possibility of such a thing may prove to be the force which will unite the women together as workers.

<sup>1</sup> See p. 99.

<sup>2</sup> See also Glasgow, Engineering, p. 99.

## DETAILED REPORTS ON TRADES

The following reports are based on evidence collected by investigators in London, Birmingham, Newcastle-on-Tyne, Glasgow, and other cities. They do not claim to give, in any instance, an exhaustive account of the industry; but, as far as possible, representative centres and firms have been selected, and the information, so far as it goes, is believed to be accurate and illustrative of the conditions prevailing in the trades and industries in question.

As the object of the inquiry was to reveal the nature and extent of the replacement of men by women, those industries have been selected in which such replacement has been found to be frequent or of a significant nature. Consequently, engineering and metals are most exhaustively treated. For the same reason, the Cotton Industry is omitted; but one small report on Textiles in Glasgow is included to illustrate the effect on the industry of the competition of munitions. In "non-industrial" occupations, Clerical Work, Distributive Trades, and Transport have been the most fruitful fields of inquiry.

### REPORT ON THE EMPLOYMENT OF WOMEN IN THE ENGINEERING AND SHIPBUILDING TRADES

#### (1) GLASGOW AND THE CLYDE

The report herewith submitted is based upon data collected during the months of May and June, 1916. The report is no more than a sketch in broad outline filled in only here and there with some detail, and the resulting picture is necessarily "patchy" and disproportional. The investigation covered the whole field of woman's labour in the engineering and shipbuilding trades in the Clyde District, which is roughly coincident with the industrial areas of the Counties of Lanark, Renfrew, Ayr, Dumbarton, and Stirling; but, the inquiry was carried out mainly in Glasgow and the industrial strip which borders either bank of the river west of Glasgow. The information was obtained from employers, work-people, welfare workers, Trade Union officials, doctors and officials of both the Factory Department of the Home Office and the Labour Exchange Department of the Board of Trade.

## I. MOVEMENT IN NUMBERS EMPLOYED AND SOURCES OF LABOUR

(a) NUMBERS EMPLOYED.—The metal group of industries employs a larger number of workers than any other occupational group in the Clyde District. Until the outbreak of war these industries were practically confined to male workers. Excluding metal manufacture and certain other small industries in which women have not apparently been introduced, the Census figures for 1911 show occupied for the Clyde District in Engineering and Machine-making, Electrical Apparatus, Tools, Types, Blocks and Dies, Arms, Miscellaneous Metal Trades, Ships and Boats, Motor manufacture, and Scientific Instrument manufacture, 219,000 males and 5,000 females, or a proportion of 43 men to 1 woman; and of the women, over 2,000 were engaged in sewing-machine manufacture and 1,400 in nail, bolt, rivet nut, and staple manufacture, and wire drawing and wire manufacture.

TABLE "A"

NUMBERS EMPLOYED IN THE CLYDE DISTRICT  
IN CERTAIN METAL OCCUPATIONS, ACCORDING TO THE CENSUS, 1911

OCCUPATION.	Numbers occupied :	
	Men.	Women.
1. Engineering and Machine Making .	142,810	2,545 <sup>1</sup>
2. Electrical Apparatus .	6,986	105
3. Tools .	2,096	118
4. Types, Blocks and Dies .	308	37
5. Arms .	244	4
6. Miscellaneous Metal Trades .	12,780	1,856 <sup>2</sup>
7. Ships and Boats .	50,408	298
8. Motor Car Manufacture .	2,389	30
9. Scientific Instrument Makers .	1,043	74
Total . .	219,064	5,067

Proportion of Men to Women .. 43·2 : 1.

It has not been possible to secure a statement of the shrinkage due to enlistments in the numbers of men employed, but in the number of engineers it is certain that the shrinkage has not been

<sup>1</sup> Over 2,000 employed in sewing-machine manufacture.

<sup>2</sup> 1,420 employed in nail, bolt, rivet, nut, screw and staple manufacture, and in wire drawing and manufacture.

very large. This view is supported by the following estimate made by the district officials of the A.S.E. regarding engineers employed in Glasgow and district—

ENGINEERS IN GLASGOW AND DISTRICT				
Numbers employed prior to the war	.	.	.	23,000
Enlisted	.	.	.	2,000
				<hr/>
Entered District since outbreak of war	.	.	.	21,000
				1,000
				<hr/>
Number now employed	.	.	.	22,000
				<hr/>

The proportion of enlistments among unskilled and semi-skilled men has been certainly much larger than among skilled men; but, on the other hand, so also has been the proportion of these classes of men entering the trade. While no sufficient statistical basis has been found for the opinion, it seems substantially correct to say that the influx of female labour to the metal trades has been additional labour rather than substituted labour. This influx has been large. A return applicable to thirty-six establishments shows employed in the second week of June, 56,137 men and 12,423 women, or a proportion of 4.5 men to 1 woman. Seventeen of these establishments were engaged in shell-making (seven exclusively), but none was engaged in shell-filling. Three of the firms employed no women; and only one firm employed women prior to the war, and this firm had almost doubled its pre-war female labour. The proportion of men to women cannot be taken as representative of the whole area since of the 12,400 women, 6,300 were engaged in shell-making, 4,700 in sewing-machine work, and only the remaining 1,400 in shipbuilding, general engineering, and miscellaneous metal trades; but the figures indicate the large increase in female labour that has taken place in the industry. In the whole Clyde district, at the middle of June, 1916, probably not less than 18,500 women were employed in the metal trades: and of these, roughly, 12,000 were engaged in shell-making and shell-filling; 4,700 in sewing-machine manufacture for war purposes; and the remaining 1,800 in shipbuilding, general engineering, and miscellaneous metal trades (including scientific instrument manufacture).

It is into the last group that "dilution" schemes have been introduced. Up to the end of May, 1916, arrangements had been

made between the H.M. Government Commission to effect dilution of Labour (Clyde District) on the one hand and, on the other, employers and Trade Union representatives under about ninety schemes to introduce approximately 4,500 women and girls to work hitherto undertaken by men. A considerable amount of this work is unskilled, and much of it is semi-skilled; only a very small proportion of it is skilled. Of the 1,800 women introduced by mid-June, probably not more than 1,000 were doing semi-skilled and skilled work; the balance were labouring.

The number of women engaged in the area has been rapidly increasing since January, 1916, and it is impossible yet to say what the maximum number of women who will be employed is likely to be. The numbers are at the time of writing being added to day by day.

(b) INFLUX TO "MEN'S" WORK, OR "WOMEN'S" WORK.—While comparatively few of the women introduced have been engaged upon work done prior to the war by men in the Clyde District, with the exception of the women engaged in sewing-machine manufacture the influx has been undoubtedly to work which, with the possible exception of shell-filling, in pre-war days would have been regarded as "men's" work. The processes on which the women have so far been engaged are described in Section II.

(c) SOURCES OF LABOUR.—The women employed have been drawn from a large number of different occupations and principally from within narrow limits of area. It is clear that the workers have come almost entirely from local firms or from homes within short distance of the works where they are now employed. In one factory only have many women been recruited from a distance: in this factory over 200 fishworkers from the Outer Hebrides are engaged, and a considerable number of women from all over Scotland and from many parts of England. The principal occupations, so far as they could be obtained by general inquiry, are here set out: Calenderers, carpet weavers; domestic servants, dressmakers, dye workers; factory workers (miscellaneous), farm servants, fishcurers, fishworkers, fieldworkers; golf-ball makers; hotel servants; laundry workers; mill workers (miscellaneous), milliners; paper mill workers, preserve factory workers, pickle factory workers, post office employees; rope workers; shopwomen, sewing-machine factory

workers, shirt machinists; tailoresses, tea-room attendants, tracers, textile factory workers.

Not even approximate figures for the different classes of occupation shown above were obtainable; and in order to secure some evidence upon this point and upon the proportion of women who were unoccupied prior to the war, a small personal inquiry among women engaged in three works was carried out. The number of women interviewed was 156, and their pre-war occupations were given as follows—

<i>Occupation.</i>	<i>No.</i>	<i>Per Cent.</i>
At Home—unoccupied . . . . .	67	42.9
Textile Factory Workers . . . . .	17	10.9
Domestic Servants . . . . .	11	7.1
Tailors . . . . .	10	6.4
Shopwomen . . . . .	8	5.1
Dress Machinists . . . . .	7	4.5
Clerks . . . . .	5	3.2
20 Miscellaneous Occupations . . . . .	31	19.9
	<hr/> 156	<hr/> 100

The small number of observations and the restricted area of choice preclude any general deductions from the results applicable to all the women engaged in the metal trades, but they bear out generally the information obtained in the general inquiry of the wide distribution of pre-war occupations and of the large proportion of women who were at home unoccupied prior to the war. Relatively few of these unoccupied women are of independent means or from well-to-do homes. Those who are not wives of soldiers and working men are principally girls who, owing to the enlistment of brothers or other male relatives, have, by both the freedom from housekeeping duties and the need of augmenting the household income, entered into the labour market. The civil status of the women interviewed is also interesting: of the 156, 17 or 10.9 per cent. were married, and 10 or 6.4 per cent. were widowed; and of the 17 married, 7 were soldiers' wives.

An independent estimate of the proportion of employed married women in the metal trades, made from a widespread inquiry in the industry, gave 11 per cent.

The inquiry yielded the following results on the point of pre-war residence—

	<i>Residence.</i>		<i>No.</i>	<i>Per Cent.</i>
Glasgow and Suburbs <sup>1</sup>	.	.	135	86.5
Rest of Scotland	.	.	12	7.7
England	.	.	2	1.3
Ireland	.	.	2	1.3
Overseas	.	.	5	3.2
		Total.	156	100

These figures also confirm the opinions based upon the general inquiry.

An important matter in connection both with present and post-war conditions is the relation of present to pre-war earnings of the women engaged in the metal trades. It was to be presumed that the earnings of the women would now be higher than they were in pre-war days. A time-rate minimum of 20s. per week is a marked advance upon pre-war rates earned by female labour. The inquiry into the present wages of women in the metal trades is dealt with in Section IV; but with the object of indicating the movement from low to higher paid occupations that has taken place, below in Table "B" are given the pre-war and the present average weekly earnings of the 156 women personally interviewed. It is necessary to point out that about 80 per cent. of these women were engaged on time-rate of wages, and that the comparison is, therefore, between pre-war earnings and present earnings close to the lower end of the scale.

TABLE "B"  
PRE-WAR AND WAR AVERAGE WEEKLY EARNINGS OF 156 FEMALE WORKERS  
IN METAL TRADES IN GLASGOW AND DISTRICT

Period.	Not Stated	At Home	Not exceeding 10/-	Ex. 15/- and n.e. 15/-	Ex. 15/- and n.e. 20/-	Ex. 20/- and n.e. 25/-	Ex. 25/- and n.e. 30/-	Ex. 30/- and n.e. 35/-	Ex. 35/- and n.e. 40/-	Ex. 40/- and n.e. 45/-	Ex. 45/-	Total.	
Pre-War	No.	1	67	7	38	33	3	1	1	2	1	2	156
	%	0.6	42.9	4.5	24.4	21.2	1.9	0.6	0.6	1.3	0.6	1.3	100
War	No.	4	—	—	—	8	108	19	1	9	5	2	156
	%	2.6	—	—	—	5.1	69.2	12.2	0.6	5.8	3.2	1.3	100

<sup>1</sup> Within a radius of 10 miles.

The comparison may be put roughly thus. Prior to the war, 43 per cent. of the women did not earn wages, 50 per cent. earned 20s. and under on the average per week; only 6 per cent. earned over 20s. on the average per week; and the earnings of 10 per cent. are unknown. Now, 5 per cent. earn 20s. and under on the average per week, 92 per cent. earn over 20s. on the average per week, and the earnings of 3 per cent. are unknown. Allowing for the increased cost of living, there still remains a very definite wage "pull" towards the metal trades, which has affected the supply of labour in other trades, particularly textiles (see Textiles Report for Glasgow), and in the district there has been general complaint that women are not procurable for other than munition work owing to the action of the same force.

Action has been taken by the local Labour Exchanges to prevent as far as possible the transfer of skilled women workers to munition factories where clearance certificates have not been granted by employers. This action has been fairly effective; but obviously where the wage attraction is so considerable on the one hand and the need for workers is so urgent on the other, the means taken could not prevent transfers in appreciable numbers taking place.

(d) GENERAL CONCLUSIONS.—The inquiry into movements in numbers and sources of labour appears to have established the following points: (1) the proportion of women to men in the metal trades has been radically altered, and an industry which prior to the war was practically confined to men, has become, for the time being at any rate, an industry open to women; (2) the influx of female labour has been additional to rather than in substitution of male labour, and has been to work hitherto regarded as "men's" work; (3) the sources of labour have been found mainly locally and, so far as women employed prior to the war are concerned, in a large and varied group of industries; (4) a large proportion of the labour has been drawn from women without occupation prior to the war, and of this proportion probably round about one-fifth are married women, and most are from working-class homes; and (5) the movement among the women employed prior to the war has been mainly from low to higher-paid occupations, and this movement has, in spite of restrictive measures, caused an appreciable shortage of labour in industries other than the metal group and particularly in the textile trades.

## II. PROCESSES

(a) WORK DONE BY WOMEN.—(i) *In Shell Factories.* Women are engaged on all the processes in the production of shells after the rough forging has been made from the small “two-pounder” for anti-aircraft guns to the 8 in. H.E. projectile. In the case of the heavier class of shells from the 4·5 in. H.E. weighing 45-50 lb. in the rough to the 8 in. H.E. weighing about 200 lb. in the rough, some of the processes, such as the first cutting to length, fixing the nose, and copper-banding, are in some factories done by men. The largest shell so far worked by women in the district is the 8 in. H.E.; 15 in. H.E. shells are worked exclusively by men. The main operations done by women on shells, including inspecting and gauging, number between twenty and thirty: a typical list of these operations is given in Table “L,” p. 139. Despite highly automatic machinery, the work entails a considerable amount of attention and skill, and also of manual labour, on the part of the machine workers; for example, one woman rough-turned 100 shells, each weighing 32 lb., in a shift of 10 hours. In addition to lifting this weight in and out of the machine every six minutes, there was the heavy labour of tightening up the chuck which grips the shell. Another woman engaged on profiling the nose of a shell weighing 15 lb., completes on the average 170 per shift. From the pay lines of women working on 4·5 in. shells—weighing from 45 lb. (say) in the rough to 30 lb. when finished—it was found that one worker had turned out 240 shells in one shift of 10 hours or one every  $2\frac{1}{2}$  minutes. The operation in this case was screwing, and she was helped in putting the work into her machine by a woman labourer, there being one labourer to every three machines: the average output in this case was about 216 per shift. Where labourers—either male or female—do not assist in the work on the heavier shells, block and tackle is generally provided; but in the case of one firm which provided a “rest” to assist the workers in handling 4·5 in. shells, the women did not use the appliance, preferring to handle the shells without.

Work on shell-fuses, such as capstan-turning, boring, milling, screwing, drilling and tapping, fitting and assembling, is also done by women in the district, but not apparently to any appreciable extent.

Shell-filling is carried on extensively by women in the Clyde District. Little information on the detailed processes performed was obtained except that the work consisted in filling cartridges with cordite and N.C.T. accessory processes, and assembling H.E. shells; but a considerable proportion of the work appears to be of a heavy labouring type. One estimate gave 200 lifts up and 200 lifts down of a box of shells weighing about 120 lb., between the floor and a table about 2 ft. 6 in. in height, during a day of  $8\frac{3}{4}$  hours: the lifting is done by two packers to each box. Another estimate gave about 500 lifts up and 500 lifts down of 60 lb. shells by one worker in a day of the same length. These estimates appear high, and neither has been verified. Women are also employed in shell-filling factories outside the danger area in labouring and packing.

The training period for all this work is short, usually one or two weeks.

(ii) *General Engineering.* The dilution of labour in the engineering and shipbuilding trades has not been in operation long enough or to a sufficient extent to give more than a tentative indication of how far women will succeed in doing work hitherto done by men. Much of the work done by them so far is labouring of a kind hitherto and still done by labourers in all classes of engineering. This unskilled work is very varied and the training period is very short—a matter of a week or two. In the case of semi-skilled and skilled work, which is, more strictly, “dilution” labour, the training period is naturally much longer, extending from two to four months. The policy generally adopted in these classes of work has been that of “up-grading,” *i.e.*, the women start on the simplest class of work and gradually go on to a higher class. Women are at present working at drilling, tapping, milling, slotting, boring, planing and shaping machines, turning-lathes, fitting (file and chisel), marking-off, etc. Where the work is skilled, the operations are usually sub-divided, and the women do the simplest work, and always under the supervision of skilled men. For example, in a machine-tool shop, women are scraping the beds of lathes and filing off the rough edges of gear boxes; but the men in each case finish the work, which in pre-war days was entirely done by them. In this sense, the processes done by women are dissimilar to those done by skilled men. In semi-skilled work, this

does not hold true to the same extent, and many of the processes are done as formerly.

(iii) *Scientific Instrument Making.* Not many women are engaged in this branch of the metal trades. The processes done are machining, filing, scale-engraving, polishing lenses, assembling, mounting, cleaning, inspecting, testing and adjusting, and work in the store. Much of this work is highly skilled, and requires very delicate handling. But, although in most processes the women are doing work hitherto done by skilled men, many of these processes have been sub-divided and, with the introduction of women, specialisation of labour has been much increased. The women in all cases are doing the simpler forms of work and, in every case, under supervision of skilled men. An instruction course in the case of at least one large firm is given to the women before they are drafted to the different departments. The period of training in this class of work is about four months.

In Table "L," p. 139, are given the main processes of the three foregoing classes of work in which women are engaged.

(b) *SHOP ORGANISATION.*—(i) *Supervision.* In shell factories, general engineering shops, and scientific-instrument shops, the women work in squads, which may number, according to the operation and the shop, from two or three to over thirty. In the engineering shops the women sometimes form part of a mixed squad under a "charge" or "leading hand." In all cases they are supervised by men, usually skilled engineers, who teach them the work, set up the machines, and grind or supply the cutting tools. The supervisors, in turn, are under a foreman responsible for the organisation of production and output. In shell factories these foremen are, in status, more or less equal to "charge hands" in general engineering. There is always also a woman superintendent, who is solely concerned with the discipline of the women. An official of the women's Trade Union suggested, in the course of the inquiry, that these superintendents should be specially trained so as to release the male supervisors for other work.

(ii) *Setting-up Machines and Grinding Tools.* The setting-up of the machines is, without exception, the work of the supervisors, but occasionally, and particularly in those processes involving frequent tool-setting, a woman will "set-up" rather than stand idly waiting. Much the same is true with regard to the grinding

of cutting-tools (while the tool is being ground, the woman stands idle), although in one national projectile factory the grinding of tools not required to be exact in size or shape is being done by women. There are also women working grinding-machines, in which the tools are fixed automatically in the required positions, and hence little skill is involved.

(iii) *Inspection.* In addition to official inspectors, there are, in the shell factories, women inspectors—or “viewers”—who gauge the work at various stages in order (*a*) to get any fault rectified before it causes further errors in succeeding operations, or (*b*) if the fault is irremediable, to scrap the work without wasting further time on it. Some of the workers complain that those inspectors who have no experience of the machining often fail to find the source of the error and blame the wrong operator.

(iv) *Flying Squads.* In at least two factories, making 4·5 in. shells, there is an organised group of workers hitherto strange to engineering shops in the district, each of whom has been taught every operation on the shell, who are prepared to fill the place of those off work for any reason. They are paid a time rate of 30s., with piece-work when at the machines. This group, called a “flying squad,” consists of women-workers—in one case in the proportion of twelve women to every eleven machines.

(v) *Labouring.* Light labouring work is largely performed by women, *e.g.*, sweeping floors and lifting shells in and out of machines. In some factories they remove metal cuttings, in others this is done by men or boys. The removal of shells in quantities is done, almost invariably, by men. In one factory, however, the women do this by means of a patent bogey, which runs under a low platform, on which the shells are piled from the machines; a lever raises the platform from the floor and rests it on the wheels of the bogey. There is a considerable number of women doing the lighter labouring work in the shipyards and engineering shops.

(vi) *Opportunities of Rising to Better Posts.* The opportunities of promotion are not many, and the women at the machines, as a whole, do not want it, as it usually entails financial loss. The wages, even if 50 per cent. above the time-rate of 20s. or 21s. paid to the machine-workers, plus a bonus on output of a few shillings, are much below the average earnings on piece-work.

The fact that in both shell-work and in general engineering work the women are, almost without exception, trained to do one operation only, seriously limits their suitability for promotion.

(vii) *Comparison with Pre-War Methods.* The whole of this organisation is a decided change from that prevailing in general engineering work prior to the war, and still prevailing so far as the men are concerned. The individual male engineer, skilled and semi-skilled, is, as a rule, directly responsible to his foreman for the work done. Under pre-war conditions, except in the case of highly standardised production and where parts must be interchangeable (*e.g.*, motor-car work), there is little inspection of separate pieces other than that of the inspector sent by those to whose order the goods are being made. Generally, the setting-up of machines and grinding of tools are done by the men who work with them: there are a few exceptions in the case of semi-skilled men. Finally, the foreman is responsible for organisation as well as discipline.

(c) **MACHINERY.**—For the work on shells now being done in this district for the first time, a very large amount of new plant has been brought in. The manager of the firm controlling by far the greater part of shell production, stated that the world had been searched for the very best automatic machinery for the work, and it had been got; and one competent observer, in the course of the inquiry, said that, for the first time in the history of the West of Scotland, engineering shops had been filled with modern machine tools. It is doubtful if this is due to the introduction of women. It is probable that it would have been done in any case, to meet the necessity of producing huge quantities of a highly standardised product. Dilution of labour in general engineering has taken place in a relatively small degree, and its effect so far on the introduction of new plant has been inappreciable.

(d) **GENERAL CONCLUSIONS IN REGARD TO END OF WAR.**—It would appear from the above facts that the extent to which processes at present performed by women are identical, or even similar, in character to those done by men prior to the war, is very limited. In the case of skilled work, it is almost non-existent; and while there is a considerable amount of semi-skilled work being done by women, it is under the supervision of men and is largely confined to repetition work, of which, in normal times,

there is not much in relation to the output of the whole district.

On the other hand, the new and highly automatic type of machinery introduced into the shell factories can be adapted to general engineering work, and especially to the production of "standardised" and "interchangeable" parts. This will strengthen the general tendency, already rapidly growing before the war, to specialisation in production and sub-division of labour. But the mass of automatic machinery introduced has been large, and, when the war ends, manufacturers will find to their hand an organisation suited to its use and a supply of labour experienced in handling it. Such valuable material will not readily be thrown to the scrap heap: rather will it be employed in an expansion of those branches of engineering organised on lines of specialised labour and automatic production. It may even create new industries.

How far the action of other forces after the war will prevent the continuance of these changes in the engineering industry it is not, of course, possible to predict; but it is clear that any consideration of the readjustment of the industry to peace conditions which fails to realise the strength and the direction of the tendency set up by them will inevitably be inadequate to the facts.

### III. HOURS OF LABOUR

(a) **SHIFT SYSTEMS.**—The working hours of women as of men in the metal trades are based commonly on the two-shift system—a day shift and a night shift. In one case, preparatory to the introduction of a three-shift system, the day has been divided into two shifts of 8 hours each. In shell factories a day and night shift for women is common; but in general engineering, as a rule, the women work a day shift only.

(i) *Day Shifts.* The length of the day shift shows some variation, the longest shift being worked in certain shell factories from 6 a.m. to 6 p.m., with two breaks for meals, one of 50 minutes and the other of 60 minutes. The shortest shift is found also in a shell factory (where the two-day shift system is in operation), from 6.30 a.m. to 2.30 p.m. and from 2.30 p.m. to 10.30 p.m., with a meal hour break. In some cases single day shifts, with one meal break, are worked; and in one case, at least, the shift is long, from 7 a.m. to 5.40 p.m., with an hour break at mid-day. Generally

outside the shell-making industry, and less generally within it, the day shift is  $9\frac{3}{4}$  working hours, exclusive of two meal breaks, one of 45 minutes and the other of 60 minutes. This is the regular working day in the district for men. Some firms, however, in order that the men and women workers shall not mix freely, have arranged the women's hours so that the women start later and finish earlier than the men, with the result that in a number of cases the women's working week is 48 hours instead of the regular week for the district of 54 hours. In addition to the meal hour breaks, in most shell factories and in several general engineering shops the women are allowed two short breaks in the day of from 10 to 15 minutes each. In some cases this arrangement, new to the industry, applies also to the men.

The normal working week of women day-shift workers varies from 44 hours to 56 hours, with 54 hours as the most common period.

(ii) *Night Shifts.* Where night shifts are worked, they vary little in the length of shift (from 12 to  $12\frac{1}{2}$  hours, with two meal breaks of from 30 to 45 minutes each); and, except in one instance where eleven shifts in the fortnight are worked (the odd shift being worked on a Sunday), the shifts are five in the week. In most cases, two short breaks of from 10 to 15 minutes are allowed to women. Women as a rule work the same hours in the night shift as men, but experience has shown that they do not take kindly to night work; and, after some experimenting, the normal arrangement has now settled down in their case to alternate fortnights of day and night shift.

(b) **OVERTIME AND SUNDAY WORK.**—Subject to the approval of the Home Office, a considerable amount of overtime is worked by women in both shell factories and general engineering shops. Generally the practice is to work three hours on three nights per week; and, in one shop at least, the women work on alternate Saturday afternoons. Sunday work is, on the whole, rare. Two firms have arranged 8-hours shifts of week-end workers, arranged in one case in two Sunday shifts, and in the other in one Saturday afternoon and two Sunday shifts. These workers are, for the most part, recruited from women who are not otherwise employed during the week. Only one firm is known to employ its ordinary workers on Sundays, and in this case alternate Sunday day shifts are worked by the women in conjunction with alternate Saturday afternoon shifts. This is the same firm which has adopted the

alternate Sunday night shift. There is some indication at present of an increase in both overtime and Sunday work, but this is probably a temporary arrangement which will last for not more than a month or two.

(c) TIMEKEEPING.—Both employers and women superintendents were generally agreed that women are, on the whole, excellent time-keepers. Not only are they punctual in their attendance at starting-time, but they are seldom off work for any lengthy period. Night-shift work accounts for more broken time than day-shift work, especially among married women. The reason given for this is that women do not so readily adapt themselves to night work as men. Sleeping during the day is not, as a rule, restful, particularly where it has to be done in an unquiet and undarkened room, and these disadvantageous conditions certainly are found in the homes of many of the women workers. In addition to these influences which affect men equally with women, there is the tendency on the part of women to take the opportunity when on night shift to use the hours when they should be asleep for the performance of domestic duties. This tendency is naturally strongest in the case of married women who have children to look after; and some employers, recognising the fact, have done their best to exclude married women from their works.

There was general agreement also that women are, on the whole, better timekeepers than men. It was not possible to test this opinion satisfactorily; but the returns by one firm for one week, so far as they go, support the view. No women were employed at the time by this firm on night shift, and so the comparison has been confined to men and women on day work. The figures are set out below in Table "C."

TABLE "C"  
WEEK ENDING 22ND APRIL, 1916

	Working Full Time.	Lost not exceed- ing 2 hr.	Lost ex. 2 hr. & n.e. 4 hr.	Lost ex. 4 hr. & n.e. 6 hr.	Lost ex. 6 hr. & n.e. 8 hr.	Lost ex. 8 hr. & n.e. 10 hr.	Lost ex. 10 hr.	Total.
MEN (Day Shift)— No. . .	174	45	32	11	8	7	35	312
Per Cent. . .	55.8	14.4	10.3	3.5	2.6	2.2	11.2	100
WOMEN (Day Shift)— No. . .	68	17	11	—	1	1	5	103
Per Cent. . .	66.0	16.5	10.7	—	1.0	1.0	4.9	100

(c) While the numbers are too small and the period too short for any general deductions, it is noticeable that not only did a larger percentage of the women work the full week, but a much smaller percentage lost time exceeding 6 hours in the week, or an average of 1 hour per day. On the other hand, only 68 per cent. of the women (58 per cent. in the case of the men) had no lost time, a fact which reflects some doubt upon the excellent time-keeping of women. The comparatively large proportion of men losing over 10 hours, or more than a working day, is also remarkable.

(d) GENERAL OBSERVATIONS.—The inquiry has shown that not only do women nominally work, roughly, the same hours as men, but their actual timekeeping compares very favourably with that of men. In an industry making under the best conditions a heavy call upon physical powers, this result is striking. It may be that psychical factors are at work which, for the time being, prevent physical effects from revealing themselves, and on that account it is well to suspend final judgment on the ability of women to work the same hours as men in this industry. It has to be remembered, too, that already modifications (*e.g.*, short rest breaks) have been made in pre-war conditions. But so far as experience goes, any unfitness of women to work the normal day hours in the engineering trades is not appreciable.

#### IV. RATES OF WAGES AND EARNINGS

(a) RATES OF WAGES.—The wage rates paid to women of 18 years and over in the engineering industry are governed generally by Memorandum L.2 issued by the Munitions Labour Supply Committee in October, 1915. The provisions of this Memorandum have now, by Section 6 of the Munitions of War (Amendment) Act, 1916, statutory force where the Minister of Munitions makes an order in the case of all establishments engaged on "munitions work" as defined by Section 9 of that Act.<sup>1</sup> (Prior to the operation of Memorandum L.2, a time-rate of 15s. per week was common in the district for all classes of shell work.)

(i) *Time Rates.* The time-rate for women employed in shell factories is based on £1 for a 54-hours week—the usual working hours in the district. The rate works out at, roughly, 4½d. per

<sup>1</sup> See General Report, p. 59.

hour; and hence, in some cases, where the working week is less than 54 hours, 20s. is not earned by the women; in other cases, notwithstanding the reduction in hours, the 20s. minimum is paid. Overtime is paid generally at time and half, and Sundays (in the rare cases where worked) at double time. When women are on night shift, meal hours, in accordance with general practice, are paid for; and, generally, the allowance given to men of 1s. per shift is made. Where the working week exceeds the usual 54 hours, the hours in excess are, in cases, paid at overtime rates. The time-rates for inspectors or "viewers" is usually 25s. per week; and for superintendents or forewomen, 30s. per week.

In shell-filling, women are paid 23s. per week of 48 hours to begin, and after five weeks' training 25s. Trolley-girls working to shell-filers get 27s. 6d. (this work is heavy); and forewomen, 30s. per week of 48 hours.

The time rates paid to women in other than shell factories vary considerably. Those employed on skilled work do not, in many cases, perform all the operations that were formerly done by men on the job, and hence the rate paid to them is not always the men's rate. Shop committees of the men have usually come to an agreement with the employers and the Dilution Commissioners for the District upon training periods varying between two and five months in length (the upper limit is rare), during which women, employed on skilled and, in a few cases, semi-skilled men's work, starting from a minimum time wage of 20s. per week, receive gradually increasing rates until, when the training period ends, the men's time-rate is paid. Dilution has been too recently introduced for semi-skilled and skilled men's time rates to be generally paid to women, but a considerable number of examples already exist of women receiving from 8d. to 11d. per hour on such work. On unskilled work—labouring of all kinds—the men's time rate is not generally paid. The minimum rate of 4½d. per hour is fairly common for this class of work, and where it is exceeded the rates do not, in many cases, equal the rates paid to men.

In establishments where the work done by women is similar to work done by them prior to the war, the rates have not generally levelled up to the war minimum, with the result that in one factory, at least, two classes of work—the one done by women prior to the

war and the other not, involving apparently about equal skill—are paid for at widely varying time rates.

Below are given some examples of women's and men's rates for the same kind of work in the same shop; and in Table "M" (p. 141) will be found a list of time rates paid to women in varying kinds of engineering work. In both statements the rates apply to women of 18 years and over, unless it is otherwise stated.

TABLE "D"

EXAMPLES OF TIME RATES OF WAGES PAID TO MEN  
AND TO WOMEN FOR THE SAME WORK IN THE SAME SHOP

Kind of Work.	Men's Rates.	Women's Rates.	Remarks.
<i>Shipyards—</i>			
Joiners' labourers	6½d. per hour	6½d. per hour	
Sawmill "	6d. "	6d. "	
Yard "	5½d. & 6d. "	5½d. & 6d. "	
Drilling . . .	8d. "	6d. "	
Hammermen Helpers	6½d. "	5½d. "	
Brass Finishing	10½d. "	6d. "	
Labouring (general)	6½d.-9d. "	6d. "	Women doing simpler operations Men doing heavier work
<i>General Engineering Shops—</i>			
Inspecting . . .	44/6 per week	44/6 per week	
Grinding . . .	40/6 "	36/6 "	
Milling . . .	40/6 "	36/6 "	
Drilling . . .	38/6 "	36/6 "	Both rates subject, when under premium bonus, to 20% increase: all 54-hr. week
Stoking Furnaces . . .	6½d. to 8½d. per hr. 27½d. per week	4½d. per hour 20/- per week	Same length of week.
Wheeling Castings . . .	27/6 "	20/- "	Men doing heavier work
Labouring (machine-shop) . . .	27/- "	26/- "	54-hours week.
" ( " ) . . .	25/- to 29/- per wk.	26/- "	Men doing rather heavier work

(ii) *Piece Rates and Premium Bonus Systems.* Piece rates have not so far, been widely applied to women's work except in shell factories, and even in these the practice is not universal. Premium bonus systems have only in rare cases, in general engineering, been applied, and not at all, so far as the inquiry has shown, in shell factories. Other forms of bonus are, however, in operation in some shell factories. Some shell factories have adopted a bonus paid on a given output of all departments, and in several departments of one factory a bonus is given to the woman turning out the maximum number of shells in the shift or in the week. This form of bonus is strongly objected to by male trade unionists on the ground that it tends to "speeding-up" with, first, ultimate reduction in piece rates; second, serious injury to the health of the

worker; and third, a weakening of common action among the workers. To the woman worker, undoubtedly, this bonus is a very strong temptation to injurious over-exertion; and one example was given in the course of the inquiry where a woman had won a "shift" bonus by turning out 132 shells (nose-profiling) in one shift where the normal output was 100 shells, and had had, as a result, to remain in bed on the following day. When it was pointed out to her later that she had acted foolishly, her reply was that she knew, but she "wasn't going to be beat." Another kind of bonus takes the form of a payment to all workers who keep full time: from the male trade unionist point of view, this bonus is not nearly so objectionable as the bonus on output.

Piece-work prices are, in general engineering, based, as a rule, upon 25 per cent. overtime earnings on a job. In shell-work, this addition of 25 per cent. has been in many cases exceeded for women: in general engineering, relatively few women are yet working on piece rates. No general comparison of women's piece rates with the piece rates of men in shell-work would be useful, since the work done is not the same. Actual rates for women were procured in a few cases; but the significance of a piece rate is seen in the earnings that it yields in a given time and not in itself, and the few examples collected are not here stated.

(b) EARNINGS OF WOMEN.—The actual earnings of women are, on the whole, considerably above the 20s. minimum. In shell factories the minimum is generally exceeded, and over a large proportion of the women employed therein much exceeded. This is due (1) to good timekeeping; (2) to the amount of overtime worked; and (3), principally, to the prevalence of piece-work. Actual cases came under notice of women earning in shell-factories as much as £5 (several cases), £4 0s. 4d., £3 4s. 10d., £3, £2 18s., and £2 17s. 10d. It is true that earnings above £3 are not generally reached; but in at least one factory employing a large number of women, this amount is often exceeded, and there the average earnings are slightly over £2. In two other factories, both employing large numbers of women, the earnings run respectively from 25s. to 45s. and from 30s. to 45s. Earnings in general engineering shops are considerably lower than in shell factories; this is due principally to the absence of piece-work in the former, but several cases of women earning on the average over 30s. per week were observed.

The following two tables, while not fully representative of the earnings at the present time throughout the district—(on the whole they underestimate the earnings)—illustrate the truth of the foregoing general statement.

In Table "E" are given examples of lowest, highest, and average weekly earnings of women in different works. The examples are from returns made at varying times between January and April, 1916, and exclude women under 18 years. In some cases, the averages are approximate only.

TABLE "E"  
EARNINGS OF WOMEN

Month of Return.	Class of Work.	Earnings :		
		Lowest.	Highest.	Average.
1916.				
January	Shells and Fuses . . . .	14/-	100/-	22/-
"	Shells . . . . .	20/-	40/-	23/-
"	" . . . . .	19/7	58/-	30/- to 35/-
"	" . . . . .	16/-	60/-	38/-
"	" . . . . .	20/-	50/-	30/-
February	" and Other Work . . . .	15/6	21/-	18/- <sup>1</sup>
"	" . . . . .	21/-	64/10	25/2
March	Shell Filling . . . . .	23/-	25/-	24/-
April	General Engineering . . . .	18/-	25/-	20/-
"	Bolts, Screws, and Nuts . .	10/-	25/9	13/6 <sup>2</sup>
"	Aeroplane Work . . . . .	17/6	32/-	25/-
"	General Engineering . . . .	20/-	21/-	20/-

In Table "F" are given examples of average earnings of women for varying kinds of work for one week in June, 1916. Where average hours worked are known, these are given also. These examples do not include any of the women in the shops where the highest earnings at shell machining are made: actual figures were not there obtainable.

On the point of comparative earnings of men and women, not much material has yet been collected. From general information

<sup>1</sup> Shop where part of the work was of the same class as pre-war work done by women.

<sup>2</sup> Shop where the work was of a class done by the women in pre-war days.

TABLE "F"  
AVERAGE EARNINGS OF WOMEN FOR ONE WEEK IN JUNE, 1916

Kind of Work.	Number employed.	Average hours worked.	Average Earnings.
Shell Machining . . . . .	87	41	£ 1 2 11
" " . . . . .	128	52½	1 5 10
" " . . . . .	231	—	1 15 6
" " . . . . .	380	—	1 9 5 <sup>1</sup>
" " . . . . .	147	—	18 0
" Inspecting . . . . .	45	—	1 6 3
Banding . . . . .	14	—	1 10 7
Grinding . . . . .	6	—	1 1 1
Transporting . . . . .	35	—	1 6 11
Sweeping . . . . .	36	—	1 4 10
Shell Labourers . . . . .	35	—	1 11 2
" " . . . . .	5	53½	1 1 5
Turbine Blading . . . . .	10	54	1 2 2
Valve Scraping . . . . .	172	—	1 2 4
Brass Foundry Labourers . . . . .	12	60½	1 6 6
Copper Shop Labourers . . . . .	2	54	1 3 0
Foundry Labourers . . . . .	3	67½	1 8 9
Aeroplane Work . . . . .	40	—	19 9

obtained it is, however, safe to say that men, generally, earn more than women: of the three grades of labour (skilled, semi-skilled, and unskilled), as a rule, skilled men earn much more than women doing skilled work, semi-skilled men earn more than women doing semi-skilled work, and unskilled men earn rather more than women doing unskilled work. It has to be remembered in this connection that the differences are greatest just in those grades where women have not in many cases passed beyond the training period prescribed; and, further, that, as has already been pointed out, even in shell factories men and women are rarely engaged on the same kind of operation. A few examples are given below of comparative earnings in shell factories where the women employed, taken together, earned probably rather more than the average weekly earnings of all women engaged in shell factories. Where the average hours worked are known, the equivalent average time-rates are shown also. The operations in shell machining are not the same for the men and the women.

<sup>1</sup> Lowest, 23s. 4d.; highest, 57s. 10d.

TABLE "G"  
COMPARATIVE EARNINGS OF MEN AND WOMEN FOR ONE WEEK IN JUNE, 1916

Shell Fac- tory.	Class of Work.	Men.			Women.				
		No.	Av. hrs. wkd.	Average Earnings.	Average Rate per hour.	No.	Av. hrs. wkd.	Average Earnings.	Average Rate per hr.
No. 1	4·5" Shell Machinists	56	47 $\frac{2}{3}$	£ s. d. 2 15 7	14·0d.	{ 87	41	£ s. d. 1 2 11	6·72d.
	4·5" "	14	57	2 0 6	8·53d.	231	—	1 15 6	—
" 2	6" "	30	—	3 7 7	—	36	—	1 4 10	—
" 3	6" " Labourers	34	—	1 16 6	—	35	—	1 10 11	—
	8" "	20	—	1 19 4	—				

A further example of the same discrepancy between the earnings of women and of men is given in a return furnished by one firm for all the workers engaged in its shell factory during the week ending 22nd April, 1916. In this factory, the earnings of women are probably below the average earnings of all women engaged in shell factories. No women were at the time engaged on night shift, and men engaged on night shift are not included in the table.

Shortly, the above table shows that of the 314 men employed, 13·4 per cent. earned not more than 20s., 14·6 per cent. earned over 20s. but not more than 30s., 39·8 per cent. earned over 30s. but not more than 50s., and 32·2 per cent. earned over 50s.; and that of the 103 women employed, 35·9 per cent. earned not more than 20s., 64·1 per cent. earned over 20s. but not more than 30s., and *none* earned over 30s. This difference between the earnings is accentuated by the fact that the men, on the whole, kept worse time than the women. (See Section II, Table "C.")

(c) GENERAL OBSERVATIONS.—This survey of wage conditions makes clear that, while women are not paid (except in comparatively few instances) as high rates as, and earn on the whole decidedly lower wages, than men in the industry, both the rates and the actual earnings of women are high; and in the case of a large proportion of the women very high, in comparison with rates and earnings of women in other industries. The effect of this difference in earning power upon other industries, particularly the textile industry, in the district has been already remarked. (See Section I.) The operation of the Munitions of War Act must maintain those earnings during the period of the war at a high level; but employers in other industries, feeling the restriction

TABLE "H"

COMPARATIVE EARNINGS OF MEN AND WOMEN ENGAGED IN A SHELL FACTORY  
DURING THE WEEK ENDING 22ND APRIL, 1916

Sex.	Work.	No. Not exceeding 10/-.	Ex. 10/- but n.e. 20/-.	Ex. 20/- but n.e. 25/-.	Ex. 25/- but n.e. 30/-.	Ex. 30/- but n.e. 35/-.	Ex. 35/- but n.e. 40/-.	Ex. 40/- but n.e. 45/-.	Ex. 45/- but n.e. 50/-.	All.	
	Blacksmiths, Boilermaking, Stamping and Fitting	No. 3	1	2	—	1	—	—	3	7	6 23
		Per Cent. (equiv.)	13.1	4.3	8.7	—	4.3	—	—	13.1	30.4
	Machinemen, Cutting Billets, Hot Drawing, Annealing, Packing, Washing, Miscellaneous	No. 9	4	10	14	11	15	22	17	11	52 165
<i>Men</i>		Per Cent. (equiv.)	5.5	2.4	6.1	8.5	6.7	9.1	13.3	10.3	6.7 31.5 100
	Inspecting, Boring & Screw-ing, External Machining, Tool Room, & Miscellaneous	No. 5	5	3	9	11	24	8	11	7	43 126
	ALL	Per Cent. (equiv.)	4.0	4.0	2.4	7.1	8.7	19.0	6.3	8.7	5.6 34.1 100
		Per Cent.	17	10	15	23	23	39	30	31	25 101 314
<i>Women</i>	Inspecting, Rough Machg., Internal Boring, Boring and Screwing, External Machg., Copper Band Turning, Miscellaneous	No. 4	7	26	53	13	—	—	—	—	— 103
		Per Cent.	3.9	6.8	25.2	51.5	12.6	—	—	—	— 100

upon the supply of labour available to them, and attributing it to the earnings of women in shell factories, have already taken action towards getting a *maximum* wage for women fixed in the engineering industry. So far, this movement has not achieved any change; but it is improbable, where the *minimum* rates fixed for women under the Munitions of War Act are already generally considerably higher than those paid to women outside of it, that the fixing of a maximum, unlikely as it is, would lead to any appreciable improvement in the supply of labour available for textile and other non-metal trades.

## V EFFICIENCY OF LABOUR

In dealing with the efficiency of female labour in the metal trades, it has to be borne carefully in mind that many of the women had before the war no experience of working machines, and that the experience of those who had worked machines (e.g., textile workers) was of a very different kind from that necessary to skilled engineering work. Where simple labouring is concerned, apart from physical disabilities, women might be reasonably expected to become quickly proficient; and in the case of work done on automatic machines, where technical skill is subordinate to attention, carefulness and dexterity, they might also be expected to reach a fair level of proficiency in a short time. Such expectations have undoubtedly been satisfied. There is general agreement that in unskilled and semi-skilled work, women have very quickly achieved success. In regularity, application, accuracy, and finish, they have proved very satisfactory; and the opinions gathered on their work amply confirm what their earnings when on piece rates indicate. Where skilled work—requiring, in addition to the above-mentioned virtues, technical knowledge, experience, adaptability, and initiative—is concerned, it is too early to speak confidently. So far as opinion has been formed, it appears to be adverse; but no reasonable standard of comparison exists by which the fairness of the opinion can be tested.

In skilled work, processes have been so sub-divided that, apart from the difficulties of fixing a proper training period, comparison with the work turned out by men cannot be generally made. One firm tried putting women on grinding tools and, after a short experience, withdrew them on the ground of their unsuitability

for the work. Another firm is employing a large number of women on scraping valve seats. Here the work consists in hand-scraping a metal face, so as to get a full "bearance" on another metal face. The work requires considerable skill and judgment, and has hitherto been done by skilled men. The women have, so far, proved unsuccessful at the work: they take very much longer to do it, and the proportion of spoiled jobs is very much higher than in the case of the men. In scientific instrument making, girls were found to be apparently much slower than boys in reaching proficiency in scale-engraving. It was ascertained later, however, that the boys had had the benefit of the instruction not given in equal measure to the girls. A readjustment which secured equality in instruction resulted in the girls doing as well as the boys. In the same industry, women are, in the case of at least one firm, proving as efficient as men in cleaning range-finders—work requiring great care—and it is thought by the management that in time the women's may surpass the men's output. The smaller fingers of the women give them an advantage in this process. But in this industry, also, unlike men, women are trained only to one operation, and carry out their work under constant supervision.

When the work of women in unskilled and semi-skilled work is compared with that of men, the results are more certain; but in the latter the supervision is closer and of a higher kind, and, in the former, women are not required to do the heavier jobs. One firm that pays its male workers 27s. 6d. per week and its female workers 20s. per week for furnace stoking and wheeling castings, thought the difference in pay was insufficient to the better work done by the men. In a shipyard, where the work done by women is drilling, red-leading, and measuring rivets, the firm, while satisfied that the women were more attentive to their work than men, did not think their work so good, though it might become so in time: here, too, physical strength was probably the differentiating cause. On the other hand, a firm employing women at plate-edge machines found them very satisfactory and, in some cases, superior to men. One woman earned 35s. per week at the work, while the earnings of the man whom she succeeded had been 28s. to 30s. per week. The woman's "mate" (a man) was earning higher wages than ever he had done before, and this was attributed by

the firm to the woman's ability. And in another case of women working drilling and other machines requiring about equal skill, a firm considered that the women were better than male apprentices of two and three years' experience working the same machines, and at one machine as good as a journeyman earning 9½d. per hour.

To sum up the rather inadequate evidence on this question of comparative efficiency, in timekeeping, attention to their work, and quickness in performing routine movements, women in the district appear to have proved themselves superior, on the whole, to men. Physically, as was to be expected, they have proved themselves less suited than men to the heavier kinds of work. In work involving initiative and adaptability, the results are, so far, in the men's favour, but difference in organisation and the short time during which women have been employed upon such work do not permit of any final conclusions being drawn. Any inferences which can be made from the slender evidence seem, however, to point to women—should they continue in the metal trades after the war—entering into competition with men, so far as skilled work is concerned, under methods of organisation and mechanical conditions practically unknown in pre-war days to the engineering trades in the district. It is in this new field of sub-division of labour and the subordination of the operator to the machine that skilled engineers have most to fear from the intrusion of women into their trade.

## VI. CONDITIONS OF LABOUR IN RELATION TO HEALTH

The war has broken down many standards of life, and not the least of these is that governing the conditions of the factory employment of women. Given the necessity for night work, Sunday work, and overtime, it has been the business of the Factory Department, in co-operation with the Ministry of Munitions, to secure that the relaxations of factory law shall react with a minimum of evil results upon health. The difficulty of dealing with the problem has been increased in the Clyde District by the employment of women in the metal trades, where, until the war, their presence was scarcely known. Fortunately the employers have risen to the occasion and have, as a rule, done all in their power to make arrangements satisfactory to the authorities. The result is that with the lowering of the standard of the conditions of

women's employment in hours of labour has gone the raising of it in other directions. The significance of this latter fact for the future is probably greater than that of the former. There is little doubt that the relaxation of the conditions governing hours will pass with the coming of peace; there is ground for hope that the improvement in the other conditions will, whether women remain in the metal trades or not, in some measure be permanent.

(a) HYGIENIC AND SANITARY CONDITIONS OF WORKROOMS.—The inquiry has shown that in the important matters of ventilation, light, temperature, and cleanliness, the conditions under which women work in the industry are good. In some cases, where old buildings have been adapted to engineering production, ventilation was at first faulty, but by the introduction of fans and other mechanical devices this is being remedied. In the newer buildings, little complaint has been made, although where corrugated iron and glass often form a large part of the structure, it is not surprising that considerable inconvenience in some establishments has been experienced when the sun was high on summer days.

Lavatory and closet accommodation conform generally to the requirements of the Home Office in sufficiency, light, ventilation, and privacy. Points on drainage have been raised, but the defects—few in number—have been invariably put right. In one large factory, the absence of hot water from the lavatories was noted. Cloakrooms for the women are provided in all factories. In some factories the accommodation is rather inadequate and the lighting defective, but, on the whole, the arrangements are satisfactory.

In the course of the inquiry, the investigators were impressed by the excellent hygienic and sanitary conditions of several of the workshops.

(b) PROVISIONS FOR MEALS.—The importance of providing well-arranged and sufficient intervals for meals is pointed out in Memorandum No. 4 issued by the Health of Munition Workers' Committee. In most works where women are employed, the incidence of meal periods is satisfactory; rarely indeed does the interval between them exceed four hours. On the basis of food being taken on the premises, the length of the meal interval is also, as a rule, sufficient. Usually, three-quarters of an hour for breakfast and one hour for dinner are allowed; but exceptions were found where,

on the one hand, the dinner interval fell to 35 minutes and, on the other, rose to 75 minutes. On night shift, two intervals of 45 to 50 minutes are, as a rule, allowed. In the case of one or two factories, at first only two intervals of 30 minutes were given on night shift, but on the intervention of the Factory Inspector these were increased to 40 minutes. Women working in the danger areas of shell-filling factories are allowed a quarter of an hour before and a quarter of an hour after meals to change their outer clothing, in addition to the meal interval. This time is paid for. The meal intervals for men are the same, with the exception that on night shift, in some cases, the men get shorter intervals than the women. It is clear that these intervals leave little time on day shift and no time on night shift for going to and from home even to those who live close to the works, and many of the women live several miles from their place of employment. The evils resulting from carried meals are well known, and the Health of Munition Workers' Committee has emphasised the importance of providing well-managed and properly equipped canteens for women workers. Most of the firms employing considerable numbers, and one or two employing small numbers of women in the metal trades, have either already provided or are providing canteens where hot meals can be taken by the workers at a low cost. A sample Bill of Charges is given below—

BILL OF CHARGES.

Meat and Vegetables . . . . .	6d.	Poached Eggs . . . . .	3d.
Soup . . . . .	1½d.	Ham and Egg . . . . .	5½d.
Pudding . . . . .	2d.	Ham . . . . .	4d.
Porridge . . . . .	1½d.	Sausages . . . . .	3d.
Tea . . . . .	1d.	Potatoes . . . . .	2d.
Scrambled Eggs. . . . .	3d.	Bread (buttered) . . . . .	1d.
Bread (plain) . . . . .	½d.		

Several of these canteens are run by the local branch of the National Union of Women Workers, and in one or two cases by the firms themselves. The service is, as a rule, paid.

The women do not take full advantage of the canteens. Estimates of the proportion of women taking dinner in different cases give from 7 per cent. to 10 per cent., and of those taking a full night meal from 25 per cent. to 75 per cent. A considerable number of women, in addition, take one course only or carry "pieces," and take tea or soup in the canteen.

In the few shops where canteens either do not exist or are in

process of building, stoves are usually provided in the cloakroom, where the women may cook food or make tea.

During the two short rest intervals of 10 to 15 minutes given generally, one or two firms provide tea for the women.

(c) PHYSICAL STRAIN, FATIGUE, AND LIABILITY TO ACCIDENTS.—No sufficient data are yet available on which to form a reliable opinion of the physical or mental effects of engineering work upon women. It is clear that no very serious consequences have yet emerged, and the period during which the women have been employed is too short for less obvious effects to be measured. There is, however, a considerable body of evidence that the work in handling the heavier classes of shells and some kinds of labouring work tax very much the strength of the women. Instances of the physical effort put forth in handling shells have already been given in Section II (a) (i) of this report. Assistance of labourers, and the use of block and tackle in lifting shells in and out of the machines, while they have lessened the danger of strain, have not removed it. Tackle or assistance of labourers is, except in a few instances, provided where shells of over 40-50 lb. in weight are handled; but women, in many cases, complain of the strain of frequent handling of shells of less weight. In lifting shells out and in from the machine, the women have to stretch over the bed of the lathe, and until the shell is clear of the machine the strain on the arms where the shell weighs about 30 lb. is considerable; and in the case of heavier shells, even where tackle or labour is provided, the women in their haste to proceed with their work frequently do not wait for assistance. In shipbuilding yards, also, the labouring work is trying (e.g., where bogies are pushed and where rubbish is removed from ships by women). Reference was also made in the course of the inquiry to the very trying effect of heat upon women engaged in a "smiddy" back-handing angle-irons. The liability of women to pelvic congestion and hernia through lifting weights and prolonged standing was emphasised in the medical opinions given. In this connection, it is important to note that at least one firm employing a large number of women has provided seats for them.

Fatigue was referred to by several doctors interviewed as a consequence within their experience of the employment of women in engineering works. One doctor who had acted as *locum tenens*

in Clydebank, a large engineering centre, stated that during his stay there he had dealt with many women patients, employed in the metal trades, complaining of general weakness. He stated the causes as hard and exacting work and carried food (constipation was a common complaint): a holiday, in many cases, was needed. Other doctors referred to the evil effects of night work. The women did not sleep well during the day owing to home conditions, and a considerable number of cases of fatigue resulted. On the bad effects of night work upon the women there was general agreement among those interviewed.

No evidence of a greater proportion of accidents among women than among men was secured. Apparently any accidents that have occurred have been slight in character and relatively few in number. The women are provided with overalls and head-coverings by the firms in all cases, and these, with fencing of dangerous machinery, lessen considerably the liability to accidents. Such accidents as have occurred were put down to carelessness and undue eagerness rather than to the nature of the work. Where women are working on shipboard, some insufficiency of handrails on gangways has been noticed, and a recommendation for the wearing of men's overalls has been made where women have to climb iron ladders between the deck and the ship's bottom; but cases of this kind are exceptional.

A more serious question has been that of women exposed to risk of industrial disease in handling certain chemical substances. "Doping," dangerous because of the presence of tetrochlor-ethane in the varnish used, is, where done by women, carried out at widely separated intervals, and then only for an hour or two at a time. In one aeroplane factory, the "doping"—under the same conditions—is done only by men. No cases of injury from "doping" came under notice. In filling shells with cordite, cases of temporary suffocation rendering artificial respiration necessary have occurred in the district; and in shell-filling factories the use of T.N.T. has resulted in cases of serious illness, accompanied by jaundice, eczema, inflammation of the arms, and pains in the limbs. At the time of inquiry, an overseer was off for a month's leave from work with the effects of exposure to this substance. Picric acid, also used in shell-filling factories, has caused illness, accompanied by nose-bleeding; but no serious case was reported.

Provision has been made in the factory to which these cases relate for the women attending the Red Cross department in the works when feeling ill. An hour is now allowed as a maximum for this purpose without loss of pay.

Against the foregoing general evidences of deleterious effects upon health have to be set the opinion that, in many cases, the women have improved in bodily condition since entering the engineering industry. Improvement has been marked particularly in the case of women occupied prior to the war in dressmaking, tailoring, and other employments where the hygienic conditions were not so good as those in which they now work. But another and, probably, a more important cause is given. As has been shown, many of the women now employed in the industry came from low-paid occupations. Good wages have made possible more adequate nourishment and better conditions of life, which have resulted in raising the physical and mental tone of the workers. The economy of high wages appears to have here a practical example.

The chief certifying surgeon in Glasgow, Dr. Scott, spoke to the well marked ability of the women who had not been employed before (and who were, on the whole, better nourished), to stand the physical strain of the work better than their sisters who had been employed in textile and other factories. On the other hand, he was of opinion that the former were, for some time at least, more liable to accidents: he put this down to their inexperience of machinery and of factory discipline.

Employers have shown readiness to accept suggestions made by the representatives of the Ministry of Munitions in the appointment of welfare-workers or forewomen, whose duty is principally to look after the physical well-being of the women. Action in this matter has been taken generally within the last few months, and there is little doubt that the result has been definitely beneficial. "First-aid" arrangements and the appointment of a nurse have also been made in some factories.

(d) GENERAL OBSERVATIONS.—The impression left by the inquiry into the conditions of labour in relation to health is that, with the exception of night hours and overtime, they are considerably better than in many other industries in which women are employed. Doubtless the exceptions have been largely responsible for the

raising of the standard in other respects, but there appears to be little doubt that firms engaged in the industry have shown a readiness to concern themselves with the welfare of their women workers, which has, unfortunately, not been a marked feature in the history of the factory employment of women. This fact cannot but react favourably in conjunction with the higher rate of wages paid upon the employment of women in factories outside of the engineering trades; whether the effect will be permanent or not is bound up with too many issues of post-war conditions to be determined. But, at least, the example will remain. On the point of hours, one observation suggests itself. Notwithstanding the absence of any definite data, such as statistics of relative output of night and day work, the fact which emerges most clearly from the inquiry into conditions of labour is that night work is ill-suited to women. Given the necessary workers, it seems desirable to introduce generally, at the earliest possible moment, the three-shift system, instead of the present two-shift. Some reduction in earnings would almost certainly follow, and with it probably a protest from the women themselves; but of the beneficial results from such a change there does not appear to be room for serious question.

## VII. HOUSING ACCOMMODATION

Since 1911 there has been a continuous decrease in the number of unlet houses in the engineering and shipbuilding area of the Clyde District, and this decrease has been accelerated with the influx of munition workers. The percentage of unlet houses at May, 1915, in the principal areas was as follows (the figures are taken from the Report of the Committee appointed by the Secretary of Scotland in 1915 to inquire into the circumstances connected with the alleged recent increases in the rental of small dwelling houses in Scotland)—

Glasgow . . . . .	4.7%	Renfrew . . . . .	0.3%
(area before extension)		Paisley . . . . .	1.8%
Partick . . . . .	0.9%	Barrhead. . . . .	1.3%
Govan . . . . .	1.6%	Rutherglen . . . . .	0.9%
Greenock. . . . .	0.2%	Clydebank . . . . .	0.0%

But while the shortage of available houses, particularly of the type occupied by the working class, and the absence of any effort

to remedy it by building, have raised a serious problem much aggravated by the war, the employment of women in the metal trades has had little or no influence upon that problem. The reasons are two: first, much the larger proportion of women have been recruited locally; and, second, in those cases where women have come into the district lodgings of a suitable character (owing to the calling up of men for the Army), have been adequate in areas convenient to their work. Mrs. Ross, of the Glasgow Labour Exchange, who is responsible for placing women in munition work in the district, had, at the time of the inquiry, a long list of lodgings empty and suitable for women workers. This list was kept up to date, and, so far, the supply of lodgings has been much more than equal to the demand. In some areas there exists a shortage of suitable lodgings for women; but, as in the case of women living at home, the travelling facilities in the district prevent any real difficulty arising from this fact. Hence, except in so far as women workers share in the general inconvenience to working-class families through the insufficiency of suitable house accommodation, the influx of women to the metal trades has neither affected nor been affected by the insufficiency of housing accommodation; and in view of the comparatively small number of the women who are incomers to the District, the continuance of the employment of the women after the war ends and the men return will be very unlikely to raise any housing problem.

## VIII. TRADE UNION ORGANISATION OF WOMEN

(a) NUMBERS ORGANISED AND UNIONS IN WHICH ORGANISED.— It was found impossible within the time available for the inquiry to obtain figures of the women employed in the metal trades who are organised in Trade Unions. So far as could be ascertained, the number so organised forms a relatively small proportion of the total number. Probably not more than 4,000 or about 22 per cent., and certainly not less than 3,000 or about 16 per cent., of the women have joined Trade Unions. Either of these figures, however, compares very favourably with the proportion of women organised in any other non-textile industry. The women are divided among at least five Trade Unions operating in the district. Of the total organised, 3,000 (approx.) at the end of May belonged to the National Federation of Women Workers, which enrols women only.

The remainder were organised, so far as is known, by the Workers' Union; the Gas and General Workers' Union; the National Amalgamated Union of Labour; and the Amalgamated Society of Dyers, Bleachers, Finishers, and Kindred Trades. The proportions in which the women organised by these four unions were distributed among them could not be ascertained, but probably the majority belonged to the first of them. None of these four Unions, with the exception of the Dyers and Bleachers, organises skilled labour or is identified with a particular trade; and the Dyers and Bleachers have made no effort to organise women in the metal trades, but have simply allowed members transferring to those trades to continue their membership. The women have been admitted to the "mixed" Unions on the same conditions as men, except for lower minimum contributions with correspondingly reduced benefits and varying kinds of benefit; but as none of these Unions held prior to the war or now holds a considerable membership in the engineering industry of the District, this point is relatively unimportant.

Of the five Unions, the National Federation of Women Workers, the Gas and General Workers' Union, and the National Amalgamated Union of Labour are members of the Shipbuilding and Engineering Federation of Trades; but only the National Federation of Women Workers has a working agreement with any trade union organising skilled men in the industry.

(b) (i) ATTITUDE OF WOMEN TO ORGANISATION.—Women workers are notoriously difficult to organise. In spite of this severe handicap, the National Federation of Women Workers made a strong and, in the circumstances, very successful effort to organise women munition-workers. The initial success has been difficult to maintain. (a) As things got settled down, grievances lessened and piece-work earnings rose to a comparatively high average; (b) the continually increasing numbers both within and without the metal trades have taxed the organising staff beyond their strength—it has to be remembered that the work covers the whole of Scotland and that the number of organisers was inadequate to the normal pre-war demands; and (c) little help can be expected from the members inside the shop—often they are in a very small minority and their fellow-workers are in almost complete ignorance of what Trade Unionism means. Even when organised, the women do not know how to use their strength. "Women learn very

slowly the fact that their union is inside, and does not consist of an organiser outside," is the view of one of their officials; and she adds that women need to have gone through a strike in order to learn to put confidence in each other and to act in unity. The demand of one or two firms that the women should approach them through "shop stewards" from among their own numbers makes too great a draft on their courage and common trust. The fear of victimisation, whether justified or not, is very real. Another great difficulty is the feeling, particularly strong in soldiers' wives, that the Union stands for the restriction of output. The opinion expressed generally by the trade union officials was that once a few women had been organised in any shop, the others came in rapidly; but that where any small defection occurred, they went out as rapidly. A further difficulty in organisation lies in keeping in touch with members when they change from one shop to another: the women are organised rather as employees in a particular factory than as individuals. This difficulty is common to Trade Unions which do not organise on an occupational basis.

On the other hand, in the metal trades the class of woman dealt with has been generally of a higher working-class grade than those among which the Unions have hitherto worked. This made the membership in the metal trades more stable. The appeal, too, that has been made to the women to organise that they may safeguard the position of the men who have enlisted has been very effective, due doubtless in large measure to the fact that many of the women are related in one way or another to male workers in the industry.

(ii) ATTITUDE OF MEN TO THE ORGANISATION OF WOMEN.—The Amalgamated Society of Engineers decided at an early period of the war, in view of the temporary nature of the introduction of women into the industry, not to take them into the Society, but to pledge support to the National Federation of Women Workers in any effort it made to organise them. The local district officials have freely given advice and urged their members to help in the shops. It has, however, been difficult to bring the influence of the male Trade Unionist to bear on the women, owing to the shell factories being separated from the engineering shops. The active members are alive to the advantage of the women being organised, and in most cases would have preferred that a

temporary section had been set up for them in their own Society. If the women ever get a permanent foothold in the industry, then it is extremely probable that they will be taken into the men's Union. The officials of the Unions organising the women speak of the energy displayed by many men in the shops in urging the women to organise. And cases have occurred where male unionists themselves have organised the women working in the same factory and then turned the organisation over to the National Federation of Women Workers.

## IX. TRADE UNION ATTITUDE TO THE INTRODUCTION OF WOMEN

### (a) THE RELAXATION AND RESTORATION OF RULES AND CUSTOMS.

—The introduction of women into the engineering and allied trades has been accepted by the Trade Unions only on the plea of urgent national necessity: and then not without written guarantees (i) that the women shall go out with the end of the war; (ii) that the change shall in no way prejudice the economic position of the men; and (iii) that all Trade Union rights and customs shall be fully restored at the termination of the war.

These guarantees were given in the "Treasury Agreement" signed on 25th March, 1915, by which the representatives of all the Trade Unions concerned in the making of munitions agreed to recommend their constituents to forego all customs and rules which would tend to restrict output. The provisions of this Agreement were later incorporated in the Munitions of War Act, 1915.

Early in 1916 a Commission to effect Dilution of Labour in the Clyde District was appointed by the Government, and it is still vigorously at work. The Commissioners have from the first taken the Trade Unions into their confidence and have carried them with them at every step, if not with heartiness at least with consent. Formal agreements have been made with the local representatives of the Amalgamated Society of Engineers, Boilermakers, and Shipwrights, by which all restrictions on unskilled men and women doing semi-skilled and skilled work in the respective trades are withdrawn. In the cases of the Boilermakers and Shipwrights, all internal lines of demarcation between sections of these trades are for the first time removed.

The conditions agreed to with a view to ensure that the guarantees of re-enforcement of all restrictions, rules, and customs relaxed will be honoured include: (i) A record of all changes made in the customary rules and practices in each shop shall be kept; (ii) no proposed change shall be introduced in any shop until the men, or their representatives, have been informed of its nature and an opportunity given to them to discuss it with the management; (iii) in the case of the engineers, a clause in all schemes for the dilution of labour shall provide that every skilled and semi-skilled man in the employment of the firm concerned, prior to the war, shall receive a certificate to that effect; (iv) in the same trade, a further provision that to ensure the schemes being properly carried out, a shop committee of the men shall be set up to confer with the management on all disputed points; and (v) in case of failure of agreement between the men and the management, all disputes shall be referred to arbitration. Where settlement by agreement through the means provided by (v) or otherwise fails, under the Munitions of War Acts, 1915-16, compulsory arbitration must be resorted to. This statutory provision is operative for twelve months after the end of the war, with the object of securing that the guarantees given to organised labour shall be effective.

(b) ATTITUDE OF MEN REGARDING POST-WAR POSITION.—Despite the guarantees, the conditions at present in force to safeguard their position, and the power retained for the Board of Trade; Trade Unionists, and the rank and file especially, are convinced that their pre-war position is being undermined. It is pointed out that, although in a number of instances the employers themselves have been compelled to introduce women against their will, when once the trouble of training them, and of adjusting the shop organisation to the new conditions are over—assuming that certain processes can be economically done by such labour—a large reserve will have been created which, at the first favourable opportunity will be called upon.

It is further maintained that following upon the expiration of the twelve months period succeeding the close of the war, the old struggle against the encroachment by the employer upon the skilled man's ground through the introduction of automatic machinery worked by semi-skilled labour will be resumed with

these additional factors operating against the men. The result will only be determined then by the relative strength of the organised forces.

The attitude of the skilled men's Trade Unions to women is largely determined by these considerations. With a view to simplifying the return at the end of hostilities to pre-war conditions, they prefer that women rather than men should now come into the industry, since the line of sex demarcation is clearer than any line based upon classes of men. On the other hand, if the influx of unskilled and semi-skilled labour is to remain or increase after the war, they prefer that men rather than women should now come into the industry on the ground that the former are stronger in their support of trade unionism, and the probability of a reduction in the skilled man's standard of life by their competition is, therefore, less. Circumstances have forced them to accept the introduction of women; and, recognising that if the women fail to organise, the skilled man's position may be further prejudiced at the end of the war, and also, on the other hand, that if the women are admitted to full membership in the skilled men's Unions, any effort to get them out of the industry later will be made difficult, they have, in the agreement with the N.F.W.W., sought provision against post-war competition by unorganised labour and, at the same time, freedom to act as they may think fit when the time of struggle comes.

(c) ATTITUDE OF WOMEN REGARDING THE POST-WAR POSITION.—The opinion of the women as given by themselves and by their Trade Union organisers is that their presence in the engineering and allied trades is limited to the war. The women feel that a serious obligation rests with them not to prejudice in any way the position of the men on their return from the Army. On the other hand, the comparatively high earnings and the satisfactory conditions of work in the industry have raised in those women who were occupied prior to the war, a strong feeling against returning to their pre-war occupations under the old conditions of work and wages. How far this feeling—and there is no doubt of its strength—will affect the final attitude of the women to work in the metal trades after the war, or how far it will tend only to modify the conditions of female labour in other industries, it is not possible yet to determine with any accuracy.

## X. OBSERVATIONS ON POST-WAR CONDITIONS

To be found among the prophets in these days is to run the risk of a fool's reward. But, although it be unwise to speak with certainty of the position of women in the Clyde District after the war, the inquiry suggests some observations on the question which may usefully be set down. Shipbuilding and marine, structural and locomotive engineering form the backbone of the metal trades in the area. The destruction caused by the war has largely occurred in just those materials which these main branches of the industry produce: it seems probable, therefore, that following upon the end of the war, the present activity in these trades will not lessen considerably, though its direction will be largely changed. This change will make for the employment of larger numbers of skilled men rather than for the continued employment of the unskilled and semi-skilled labour which is at present at work on munitions. If the war continues for a long period, a considerable number of women may be able to do skilled engineering work: if it ends within a year, the likelihood of any large number of women being able to do such work is small. But whether the war lasts a long or a short period, the great mass of women at present engaged in engineering will, as far as this district is concerned, improbably be suited to the class of production necessary to make good the destruction caused by hostilities. This fact will make for a return to pre-war methods of output in the engineering trades. On the other hand, the purchase of large quantities of automatic machinery, the creation of an organisation suited to its use, and the presence of a body of labour trained in handling it will make for the extension of old or the setting up of new industries engaged in repeat production. Women have proved themselves suited to this last class of work and, given normal hours and no night work, there seems no reason why they should suffer injurious physical or mental effects through undertaking it.

Assuming that repeat production can be economically extended in the District, there appears reason to expect, therefore, that women may continue in the metal trades without seriously encroaching, for a considerable period, at any rate, upon the work hitherto done by skilled men. The final position of women in

these trades, if this view is realised, will depend upon the ability of men and women in the period during which skilled work is in large demand to adjust their respective spheres of work, or to agree upon the conditions under which they may enter the industry upon terms of equality. The withdrawal of the protection given by the Munitions of War Act against reducing the level of women's wages and their conditions of labour will, if it endangers the position of the men, on the other hand increase the readiness of the women to organise. A threatened reduction in wages is a stronger incentive to Trade Union organisation than the hope of increased pay.

In so far as the demand for female labour in the metal trades fails at the end of the war, the consequent return of the women to pre-war occupations will not in the Clyde District be made difficult by the necessity for movement over a wide area. The inquiry has shown that the women have been mainly recruited from local sources. More serious questions will probably arise relating to wages and conditions of work. Any lowering of the comparatively high standard set in engineering establishments will be resisted strongly by the women. In itself, the probability of such a reduction will make for Trade Union action, and this tendency will certainly be strengthened by the experience of the women in working alongside of male trade unionists and in the Unions joined by them during the war. How far women will be able to maintain their present wages and conditions of work will evidently depend largely not only upon the demand for them by the engineering trades, but upon the conditions of trade in other industries in which they have hitherto been employed. If those conditions are favourable, it seems probable that, while they will not be able to withstand an appreciable reduction in their present earnings, they will secure a permanent increase on their pre-war rates of remuneration and, further, that the other conditions under which they have to work will be considerably improved. But whether conditions of trade be favourable or not, it is difficult to resist the conclusion that the standards set during the war will, through public opinion as well as by the action of the women themselves, result in a permanent betterment of the position of female labour in the industries of the Clyde District.

TABLE "K"

CIVIL STATUS, PRE-WAR OCCUPATION, AND PRE-WAR RESIDENCE OF  
156 FEMALE WORKERS IN METAL TRADES IN GLASGOW AND DISTRICT

Civil Status.	No.	Pre-War Occupation.	No.	Pre-War Residence.	No.
Single . .	128	Textile Factory Workers . . . .	17	Glasgow and subnrbs <sup>2</sup> . . .	135
Married . .	17 <sup>1</sup>	Domestic Servants . . . .	11	Aberdeen . . . .	2
		Tailors . . . .	10	Ardeer . . . .	1
		Shopwomen . . . .	8	Anchterarder . . . .	1
		Dress Machinists . . . .	7	Dundee . . . .	1
Widowed . .	10	Clerks . . . .	5		
		Dressmakers . . . .	4	Edinburgh . . . .	1
		Nurses . . . .	4		
Not stated . .	1	Waitresses . . . .	4	Keith . . . .	1
		Warehouse Workers . . . .	2	Kirkcaldy . . . .	1
		Packers . . . .	2	Longniddry . . . .	1
		Upholsterer, Frame-maker, Book-sewer, Hand-sewer, Designer, Brushmaker, Biscuit Factory Worker, Mill Calenderer, Fishing Tackle-maker, Laundry Worker, Collector, Explosives Worker, Farm Servant, Scientific Instrument maker, Keeping Lodgers	15	Tillicoultry . . . .	1
				Troon . . . .	1
				Stirling . . . .	1
				England.	
				Burnley . . . .	1
				Lancashire . . . .	1
				Ireland.	
				Belfast . . . .	1
				Ireland . . . .	1
				Overseas.	
		Unoccupied—		Pawtucket, U.S.A.	1
		At Home . . . .	67	America . . . .	1
				St. Johns, N.B. . . .	1
				Cape Town, S.A. . . .	1
				Russia . . . .	1
Total . .	156	Total . .	156	Total . .	156

TABLE "L"

(a) WORK DONE BY WOMEN ON SHELLS—  
*On Shell body*

1. Cutting off open end.
2. Centring.
3. Rough turning.
4. Transfer marks body to base.
5. Rough face base leaving centre.
6. bore.
7. Finish bore.
8. Bore recess and finish face for nose.
9. " and tap for fixing screw.
10. Mill thread.

<sup>1</sup> Soldiers' wives = 7.      <sup>2</sup> Within 10 mile radius of Glasgow.

*After nose fixed*

11. Finish, turn, and form outside of complete shell
12. Weigh and mark excess weight.
13. Cut base for weight.
14. Groove and wave.
15. Recess for base-plate.
16. Rivet base-plate and skim base.
17. Turn copper band.

*On nose preparatory to fixing*

1. Cut off.
  2. Rough bore.
  3. " cup.
  4. Finish, taper, bore, and face.
  5. Turn and recess for screwing.
  6. Rough form nose.
- Examining in addition, and washing, polishing, and lacquering.

*Fuses*

Capstan turning, boring, drilling, milling, and screwing; tapping brasswork, marking, stamping, soldering, tinning, washing, and assembling.

*Shell-filling*

Filling cartridges with cordite and N.C.T., accessory processes, assembling H.E. shells, and packing and labouring inside and outside danger zone.

**(b) WORK DONE BY WOMEN IN ENGINEERING SHOPS—***Aeroplane and Balloon Work.*

Screwing, milling, and boring nuts and bolts. Screwing tie-rods. Drilling and turning buckles and fork joints. Punching aeroplane parts. Vertical boring. Turning (turret and centre lathes). Filing. Stretching and sewing canvas. Painting, solutioning, and varnishing. Balloon making.

*General and Electrical Engineering Shops.*

Boring, drilling, slotting, planing, tapping, shaping, and milling machines. Automatic, turret, centre, and chuck lathes. Buffing and grinding and gear-cutting machines. Hack-saw. Hand-filing. Scraping and bedding slides. Working at bench and surface table. Brass turning and finishing. Driving and following cranes. Core-making. Iron and brass dressing. Hammermen's helpers. Boiler-makers' helpers. Rivet heating. Armature winding. Tinning and commutator fitting. Boiler firing and light labouring. "Slap-up" painting and plate-edge machines.

*Motor-car Works.*

Light turning, and turning and screwing on semi- and fully-automatic lathes. Labouring.

*Shipyards.*

Attending plate-rolling and joggling machines. Back-handing angle-irons. Flanging. Fitting, upholstering, and polishing. Drillers' and caulkers' assistants. Plumbers' assistants. Platers' helpers. Rivet heaters. Holders-on. Crane driving. Catch girls. Firing plate furnace. General labouring (gathering scrap and cleaning up vessels in construction).

*Tube Works.*

Cutting, screwing, and stamping small tubes; oiling and stacking tubes. Stove work. Testing tubes. Staving tubes.

*Scientific Instrument Makers.*

Machining, filing, scale-engraving, polishing lenses, assembling, mounting, cleaning, inspecting, testing, adjusting, and store work.

TABLE "M"

EXAMPLES OF TIME RATES PAID TO WOMEN  
IN VARYING KINDS OF ENGINEERING WORK

Kind of Work.	Rate per hour.	Kind of Work.	Rate per hour.
Automatic Lathes . . .	4½d.	Labouring (general) . . .	4½d.-5d.-5½d.
Bolt and Screw Machinists . . .	3½d. (under 18)	Lens Testing . . .	6d.-8d.
Balloon Making . . .	5d.	Machine Turning . . .	5d.
Bench Work (Aeroplane) . . .	5½d.	Marking-off . . .	4½d.
Brass Fitting . . .	4d.	Milling . . .	4½d.-8½d.
Finishing . . .	6d.	Nut Screwing . . .	3½d.
Backhanding Angle Irons . . .	6d.	Painting (rough work) . . .	4½d.
Brass Foundry Labourers . . .	5d.-5½d.	Polishers (ship) . . .	5d.
Caulkers' Assistants . . .	2½d. (under 18)	Slotting . . .	4½d.-5½d.-6½d.
Coremaking . . .	4d.	Shaping . . .	4½d.
Crane Driving . . .	6d.	Stove Work (tubes) . . .	3½d.
Copper Shop Labourers . . .	4½d.	Shipyard Labourers . . .	6d.
Drilling (various) . . .	12½d. (under 18)	Shipwright Signallers . . .	2½d. (under 18)
Forewomen . . .	5½d.-6d.-6½d.	Storekeepers . . .	3d. (under 16)
Furnace Stoking . . .	5d.	Sawmill Labourers . . .	6d.
Flanging . . .	6d.	Scientific Inst. Fitting . . .	6d.-8d.
Grinding Machinists . . .	8d.	Adjusting . . .	6d.-10d.
Ground Staging (ship-yard) . . .	4d.	Turbine Blading (machining and filing) . . .	4½d.-5½d.
Gatekeepers . . .	{ 1½d. (under 16) 0½d.	Tube Finishing . . .	4½d.
Hammermen Helpers . . .	6d.	Tool Fitting . . .	4½d.
Hand-filing . . .	5d.	Turning Lathes (small) . . .	4½d.
Iron Foundry Labourers . . .	5½d.-6½d.	Upholsterers (ship) . . .	5d.
Joiners' Labourers (shipyard) . . .	6½d.	Welding (Aeroplane) . . .	5½d.
Joggling Machine attendant . . .	4½d.	Zincing (helpers) . . .	5d.

## ENGINEERING AND SHIPBUILDING

## (2) NEWCASTLE

*The following report shows the conditions holding in three firms in June and July, 1916*

## FIRM A

At two of the yards of this firm, women are now employed in the engineering works and boiler shop, the shipbuilding yard, and the offices. Prior to the war, women were only employed in the office and drawing office. In April, the firm commenced the making of shells, and women are employed in this department. The following tables give the numbers employed in the shipyard and the works—



*Erecting Shop :*

Labouring . . . . .	3
Assisting in Store . . . . .	1
<i>Outside :</i>	
Labouring . . . . .	4

**BOILER SHOP—**

Labouring ( <i>i.e.</i> , cleaning boiler tubes) . . . . .	17
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**SHELL DEPARTMENT—**

Assisting in Store . . . . .	1
Inspectors . . . . .	3
Machinists . . . . .	46
Training . . . . .	5
Cloakroom Attendants . . . . .	2

**CLERKS AND OFFICIALS—**

Clerical . . . . .	6
Tracing . . . . .	1
Welfare Superintendents . . . . .	2
	— 9

Total . . . . .	98
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<u>  </u>	<u>  </u>
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Thirty-two girls are employed as clerks and tracers. Of these, nine were employed prior to the war.

**OFFICES**

The employment of the above number of girls is due mainly to the replacement of men rather than to a change in the nature of the work or increase in the total amount of business done. The employment of women has not involved any change in the organisation of the work, except that they are employed on the simpler operations. Otherwise the work done by the girls is exactly identical with that formerly done by a man. The girls are drawn from among those who have had a little business experience since leaving an ordinary elementary school; but a few are drawn directly from school, and some after a three months' preliminary training at Rutherford Technical College. Those from school begin at 5s. or 6s. per week, whilst those with two or three years' experience commence at 20s. Girls from high schools have not been employed, the secretary being of opinion that they are less amenable to the work of an office. Prior to the war, vacancies in the office staff were filled by "apprentice boys," who were paid 5s. in their first year, 9s. in their second year, 12s. in their third, and 15s. in their fourth and final year. It will thus be seen that

many of the girls are being paid at a higher rate than some of the "apprentice boys," who have been two or three years with the firm.

On the whole, the work of these girls is found less satisfactory than the work of the junior clerks whom they have replaced. This is partly, but not wholly, due to the fact that the girls know little of shipbuilding, and necessarily cannot mix with other workers in a shipbuilding yard to the extent that boy clerks do. Hence their knowledge of the work of the firm remains very limited. Moreover, this results in their being confined to the simpler jobs in certain branches of office work (*e.g.*, the Costing Department). In this department it is frequently necessary for a clerk to go into the yard and, by cross-examining foremen and others, to get additional information as to the particular job on which time has been spent or material used. It is difficult, if not impossible, for girls of this type to do this. The Secretary also felt that women did not apply themselves so well to office work as men, and could not respond so well when an increase in the pressure of work took place.

It is felt that it will be necessary to retain some of these girl clerks after the war; but the opinion was expressed that boys and men, if they could be had, would be preferred.

One or more senior girls have been appointed in some departments to act as "welfarers." Whilst doing their ordinary clerical work, it is the duty of these welfarers to look after the girls and report anything going wrong. They do not supervise the actual work of the girls, however.

#### SHIPTYARD

As the table given above shows, there are now sixty-two women employed in or about the yard. Generally, they are acting merely as labourers. They are drawn from a different class from the girl clerks, and are usually physically more capable of taking this heavier work.

It was impossible to get detailed particulars of the work of each of these women, but I examined carefully the work of three. In the joiner's shop, women were assisting men at the circular saws, and one was engaged to sweep up and carry wood. Here the women were doing purely mechanical work demanding neither judgment nor initiative. They were simply assisting the men. They worked the ordinary weekly hours of the district (53) with

no overtime and no night work, and were each paid 20s. per week; whilst the men whom they had replaced were paid prior to the war 24s. Men had still to be retained to do the heavy work. The foreman appeared to be very disappointed with them. He asserted that they were much less efficient than men even after some experience. He put down their relative efficiency as something like three or four women to two men. He also found that they were inclined to leave their jobs to go and talk to other workers, and were incapable of working at high pressure when work was urgent. The foreman sincerely hoped that he could replace them with men on the termination of the war.

Women are engaged in general tidying up, and they are allowed on the decks of vessels but not on staging, and this work seemed entirely suitable for them. An examination of their work in the finishing off of bent boiler tubes showed that they merely assist men in purely mechanical work, and replace boys and youths.

The general opinion of the yard manager and the yard foreman seemed to be that women were not satisfactory workers in a shipyard. The chief complaints were that they were constantly stopping to gossip, not only with other women workers but with the men; that if they had to go from one part of the yard to another, they waited to go arm in arm with another worker, and sauntered about in a leisurely and careless fashion. One of the directors admitted, however, that when carrying things from one place to another they moved more quickly than men, who adopt what is called "shop pace." In estimating the value of a woman worker, one must also remember that, as a rule, she can carry only about one-third of the load of a man. Probably when the newness of her work has worn off, some of the above drawbacks will disappear, and she will take her work more seriously than she appears to do at present; but it is extremely doubtful whether women will be retained in shipyards (if the experience of this firm is typical) after the war.

#### ENGINEERING WORKS

*A. Shell Department.* In this department, 57 women are employed, of whom 54 are working on the lathes or inspecting. These workers have been engaged (as most of the other women workers in this firm) through the Labour Exchanges, preference

being given, however, first, to relatives of former employees now serving; secondly, to widows of soldiers who have died; thirdly, to soldiers' dependents. 30 per cent. have not been in the labour market, but have worked at home; 20 per cent. were domestic servants; 25 per cent. are soldiers' wives or widows; the remaining 25 per cent. have been drawn from the badly paid trades, such as pottery, ropery, etc. It is clear that an exceedingly good and intelligent type of woman worker has been secured, and one cannot fail to be impressed with the intelligent and able way in which they go about their work. In this respect, it forms a great contrast to the work of the women of the shipyard, in spite of the fact that the commencing wage in each place is, by Government instruction, 20s. per week.

The women receive little preliminary instruction: it amounts to but 60 or 70 hours, and consists of their being placed under an efficient woman worker to be shown how the work is done. So far as I could gather, no attempt is made to give any theoretical instruction of any kind. The women do the whole of the process from the rough shell as it leaves the hands of the forgemen to the stage where it proceeds to be filled, with the exception of the testing and certain work in the varnishing department which is done by men. The fitting of the nose-cap of the shell is work, however, which, so far, the women have not been capable of doing, and is, therefore, undertaken by the men. Men are employed to grind the tools, and still more expert men to *set* the tools and to supervise the machines to see that they are working properly. Some five or six men, in addition to the shop-manager, were thus employed. The women work exactly the same hours as the men, namely, from 6 a.m. to 5 p.m., and from 5 p.m. to 6 a.m.

The work is the kind of work on which boys and youths would have been employed prior to the war at 14s. or 15s. per week. The women are paid on piece rates, with a minimum of 20s. per week. This compares very favourably with a pre-war rate of 23s. a week for men when employed on similar work.

A careful examination of the work done in shell-making as organised in this workshop clearly shows that it is repetition work and requires very little judgment. The worker must, however, be able to adjust the shell in its right position in the lathe, to

manipulate the different levers, and to apply the gauges. But since the "stops" are all arranged for her, it requires little intelligence to know when to stop applying a given tool. It is unnecessary for the girls to lift the shells by hand, since there is a simple form of crane for this purpose adjacent to every lathe. The women work in overalls and caps. Apart from the fact that the work is dirty for the hands, the work seems quite suitable for women. Some of the workers were wearing leather gardening gloves. There is no great noise; there is ample space between the machines and the shop is lofty and well lighted. At first, seats were provided; but most of these have now been taken away, owing it is asserted to their being abused.

*B. Other Engineering Shops.* A few women are employed on drilling and similar machines in the other shops (see above table). It is found that they make quite good drillers, and on delicate drilling are frequently better than men. They start at 20s. a week, but some who are engaged on general work (that is, not repetition work) earn as much as 25s. a week. Men on general work usually earn 28s. or 29s. a week.

**GENERAL CONCLUSIONS IN ENGINEERING.**—It is likely that those women who have proved their ability will be kept on after the war, for it is said that women working with a machine do not show the same inclination to gossip as those engaged on labouring jobs. In fact, they apply themselves to the work even better than men, although they are not as capable of work at high pressure as men are. It is too early yet to say whether they are more liable to accidents than men. Certainly they are more liable to shock, due probably to initial nervousness. They are not so versatile as men; and since the character of the work in engineering varies very greatly, it is not likely that they will be engaged in any great numbers in any but repetition work. Women workers are more amenable in engineering shops than men. Since drilling has been generally done by non-union labour, there has been little or no difficulty with Trade Unions.

**SHIPBUILDING AND ENGINEERING.**—Of the women employed in the shipyard and engineering shops, 75 per cent. are married; 14 per cent. are soldiers' widows; 59 per cent. soldiers' wives; and 2 per cent. wives of civilians. The whole 75 per cent. was not in the labour market prior to the war. Of the remaining 25 per

cent., almost all were engaged in unskilled casual work prior to the war. It includes girls from the ropery and pottery works (cheap shops), but not many domestic workers; and the average wage of these 25 per cent. prior to the war seems to have been from 10s. to 15s. a week.

According to the foreman of the various departments, about 45 per cent. of the women seem to be doing the same amount of work as the men they displace and giving the same result. The remaining 55 per cent. are not able to give the same amount of output as the men did. Owing to the amount of bad weather, the shipyard has not been the best place to see the best of women's labour. The women have found working in the open in damp weather extremely trying. The engaging and dismissing of all women workers, the supervision and conditions of the food arrangements, are in the hands of a woman supervisor. A day nursery, where mothers may leave their young children, is attached to the works.

#### *FIRM B*

In this firm, women are employed in the Counting-house, Drawing Office, and the Workshops.

#### WORKSHOPS

About fifty women are employed in all, replacing either men or boys. The majority are replacing boy apprentices, the latter having gone on to more highly skilled work of their own class. The following are the operations being done by women—

(a) Turbine blade-shop—all minor machine operations on the preparation of or building segments of turbine blades.

(b) Sundry machines: (1) Facing pipe flanges and flanges of castings; (2) drilling and tapping pipe flanges; (3) making condenser ferrules; (4) tapping nuts; (5) screwing bolts; (6) facing nuts; (7) turning pipe flanges; (8) engraving plates (engraving machine); (9) drilling by means of sensitive drilling-machines.

(c) Brass foundry—making cores. The employment of women has involved no additional foremen, in spite of the fact that they require much supervision whilst learning. It has involved, however, provision of a separate mess-room and other accommodation, and—since women may not, under the Factory Acts, work in a

brass foundry where casting is taking place—the provision of a special core foundry. The boy apprentices have gone to the journeyman's work. This is the only extent to which the dilution of labour has been carried, since women have not gone on to skilled work, being partly hindered therefrom by Trade Union regulations.

(d) Other work: Testing and finishing condenser tubes, attending gear-hobbing machines, and sweeping up.

*Output.* Generally speaking, the day's output of a woman is at least equal to a day's output of the worker she has replaced, though probably a woman worker is incapable of turning out work at the same speed as a man at his best rate. It is, however, the opinion of this firm that the women are steadier workers; they apply themselves better to a job; they don't play about so much; and they do not object to—in fact, they seem to prefer—jobs which men are apt to regard as monotonous (as they probably are).

*Wages.* It is a Government instruction that the women over 18 years doing work which normally would be done by male labour must be paid the minimum wage of 20s. a week. No woman under 18 years of age is employed, and, therefore, 20s. is the minimum rate. After two months or so, most of the women are able to earn 24s. All are paid time rates and not piece rates. The following are the pre-war rates of male workers for this class of work: Indentured apprentice labour—5s., 6s., 8s., 10s., 12s.; machinists—the wages vary according to the class of machine; youths from 15s. upwards; adults, 24s. to 35s., with a 4s. increase during the war.

The liability of accidents among women workers is much the same as men workers.

*Foundry.* This is an extremely interesting application of women's labour. The firm has built a small one-storey building, where the girls make the cores.<sup>1</sup> It is provided with benches round the walls, with small drying ovens, adequate water supply, and washing basin. It is well lighted, and the girls may sit at their work. Altogether a bright, pleasant room, reminding one of a clay-modelling room in a school of art or a room in a pottery works. A good class of girl has been employed. As yet, only small cores are made. The girls were trained by the foreman of the Brass

<sup>1</sup> Core-making is very frequently women's work in Birmingham even in time of peace.

Foundry, who spent little more than a week in showing the girls what was required and how the operations were carried out. With occasional visits since, this has sufficed, and the girls themselves teach new-comers. It appeared to be work quite suitable for women, and it is well within their powers. It is neither heavy nor particularly dirty, though a trifle dusty; and since the patterns vary, it is not nearly so monotonous as the work in the shell-shop. The firm is very well pleased with the result of this experiment. All the girls they have tried have proved satisfactory; and, it is a striking thing that before they had been at work a week, men in the foundry were asking to have their cores made by women and not by the boys. It is likely that women will retain their places in this occupation, since, even before the war, boys were difficult to get. For some reason or other, difficult to explain, boys seem loath to go into foundries. Possibly the reason is that there are fewer openings from the foundry than from a general engineering shop. If, however, women do replace boys, the difficulty of training adult male brass and iron moulders will be considerably increased. Certainly it is difficult to see how women could do the heavier and bigger jobs in moulding or the casting.

### *FIRM C*

There are only three departments in which girls or women are employed, namely, The Office, the Drawing Office, and the Mirror Polishing Department. But when it was visited, the firm, under the pressure of the Ministry of Munitions, was contemplating an introduction of women into several other departments, such as on the simple lathe work and the electric lamp department.

The introduction of women into a pattern shop had been hindered by the fact that, under the terms of agreement with the Trade Union organisation, women must be paid the same rate as the men. It would thus follow that a woman—set, for example, to do the simpler jobs, to assist a man pattern-maker, such as drawing screws from wooden patterns—would have to be paid a wage of 43s. per week. The result has been that the firm has found it impossible so to reorganise this department as to keep their skilled pattern-makers doing only the most highly skilled part of the pattern-maker's job.

In the lathe shops of the fitting departments, the firm has carried out the usual dilution of skilled labour by using boys under military age as labourers and machine men.

#### OFFICE

Ten additional women clerks have been engaged to replace men clerks; and are now engaged in the clerical work relating to State insurance, wages books, advising dispatch of goods, posting (material and wages), analysis of wages, indexing, filing, the simpler costing work. In all these, with the exception of costing, the women clerks are doing exactly the same work as the male clerks they have replaced, though the chief clerk estimated that it took on the average three women to do the work of two men; and this was after the women had been trained to do the work. In the case of costing work, the firm has found that women can only undertake the simpler kinds of this work, and the most difficult parts have to be done by men. Costing work has, therefore, been reorganised, and now the men prepare and the women merely enter up the figures.

#### DRAWING OFFICE

Eighteen women tracers were employed in this department before the war.

#### MIRROR DEPARTMENT

Girls were employed in the mirror making before the war, chiefly because of the unsatisfactory nature of the men's work. The work to be done is simple in character and, except on the part of the supervisor, requires little judgment. It is by no means heavy work and, though a little dirty, it is not unsuitable for women workers. In this department, four men and seven girls are employed. At first, six men and no women were employed. On the outbreak of war, two men left, and were replaced by women. At the same time, the amount of work greatly increased, and hence additional women were engaged. The work was then reorganised, and the four men now chiefly act as supervisors.

The women each look after the same machines as the men.

*Wages.* Men, 35s. to 45s.; women, 20s.; supervisors, 40s.

## ENGINEERING AND METAL TRADES

## (3) BIRMINGHAM

*The following report is based on information obtained in June, 1916, from employers, welfare workers, and trade union officials.*

## 1. MOVEMENT IN NUMBERS EMPLOYED AND SOURCES OF LABOUR

(a) NUMBERS EMPLOYED.—The metal firms employ a far larger number of women than any other group of industries in Birmingham.

The following figures show the numbers of men and women employed in the metal trades in Birmingham in 1911—

		Men.	Women.
Iron and Steel Manufacture	.	1,755	29
General Engineering	.	17,129	97
Electrical Apparatus	.	4,003	900
Tools, Dies, Arms, Miscellaneous Metals <sup>1</sup>	.	515,527	24,766
Cycles, Motors, etc.	.	17,633	4,506
Precious Metals <sup>2</sup>	.	14,305	7,065

NOTE.—The total number of women in all occupations was 136,866.

Since the war, there has been a large influx of women into new workshops engaged in the manufacture of shells and other munitions. In many of the old workshops also there has been an increase in the number of women employed. In certain firms not engaged on the manufacture of munitions, and where large numbers of women were employed before the war, such as pen making factories, galvanised holloware and firebrick trades, the number of women has noticeably decreased; but many of the smaller metal firms have now new departments attached to them, where many women are engaged on the manufacture of cartridge caps, etc.

In brass foundries, sheet metal works, and motor works, few women are employed, and little change has been made since the war, as, in general, the work is too heavy for any but male workers. The great increase of women in some firms is partly due to a change

<sup>1</sup> Including (women) steel pens, 3,473; brass and bronze, 4,697; bolts, nuts, etc., 1,865; plated metal, 2,250; lamps, etc., 1,773.

<sup>2</sup> Including (women) gold and silversmiths, and jewellers, 5,466.

in the nature of the work, due to Government contracts; partly to a change in plant suited to the manipulation of women; and, to some extent, to the actual replacement of men by women, but only to a very small extent in skilled work. The numbers of women employed are being added to day by day in certain firms engaged on munition work; in others, there has recently been a falling off in the numbers required because of uncertainty as to new contracts, and the fact that the required output was being reached.

It is noticeable that in certain firms, although a large number of male employees have joined the forces, there has been a considerable increase in the employment of male labour since the war. Those who have joined the forces are mainly unskilled and the semi-skilled workers.

(b) SOURCES OF LABOUR.—The women employed have been drawn from a large number of different occupations, and from within near and more distant areas. In most of the larger shell factories, women have come from Scotland, Wales, Ireland, and distant parts of this country; but one of the largest factories has drawn its female labour locally.

The previous occupations of women now making munitions were mainly in domestic service, dress-making, millinery, blanket-weaving, munitions (local and Huddersfield), silk-weaving, and sweet-making. Some were shop-assistants and barmaids. Many married women have been employed, some of whom are the wives of soldiers and sailors, or have sons who have joined the Forces.

(c) GENERAL CONCLUSIONS.—Owing to the need of large and steady output of war work, the business of most of the metal firms has increased very largely. The women employed have been in addition to, rather than in substitution of, male labour; but their work has been similar to that formerly done by men, and their adaptability to this work is significant. The fact that a considerable number of the women employed are drawn from outside sources is noteworthy, seeing that a new element in the life of the town is introduced.

In most cases, the women employed have been previously engaged on lower paid occupations. This has caused a shortage of labour in other directions, such as domestic service, shop-assistants, etc.

## 2. PROCESSES

(a) WORK DONE BY WOMEN.—The work done by women is nearly all unskilled and semi-skilled. This includes capstan lathe and press working, and assembling. The machines used are automatic, and the work is repetitive and continuous. Other processes on which women are engaged are the early processes in tool-making, saw milling, and boxes (heavy lifting is done by men in this last process). Women are also carriers in fuse huts and sweepers, and are engaged in the stamping room. One factory tried to employ women on "mufflers," but found the strain was too great except for the women who had been Cradley Heath chain-makers previously: these last had to be allowed extra nourishment.

Women were also found engaged in cartridge cap making and on some of the last processes of making shell cases by hydraulic press. The first processes, which were heavier, were done by men. In one kind of lathe, the men and women work together, about one man to four women—the man does the first part of the process, tightening the clutch and the first part of boring.

In a few cases, women were doing skilled work after a short period of training. The work was identical in character with that of skilled men, but in many processes was lighter.

(b) SHOP ORGANISATION.—*Supervision.* In many shell factories, foremen were at the head of various departments, and the women workers were supervised by women charge hands (who did some work in the department). In the fuse huts, the women charge hands supervised five women workers.

In other shell factories, forewomen supervised the work in certain departments. Where the workshops have arisen with the war, and where the influx of female labour has been very great, supervisors, or women welfare workers, have been appointed to represent the interests of the workers and to investigate all conditions of their work.

*Machinery.* In many cases, the existing plant needed no alteration when turned to munition purposes. In other cases, slight modification and readjustment of parts had to be made. Where the workshops were new, the plant was entirely new, and in certain cases it was hoped that it would disappear after the war.

Automatic machinery has been the most striking introduction, but it may not be due to the influx of women into new industries, but to the necessity to increase the output of certain goods other than those which the war has created.

*Inspection.* There are 400 women employed in Birmingham by the Ministry of Munitions in examining shells. The work is not highly skilled. The women who are now doing it were formerly domestic servants, waitresses, leisured women, and soldiers' wives; and the work will cease after the war.

*Opportunities of Rising to Better Posts.* There are not many opportunities, as the work done is so frequently limited to one process, and lack of ambition prevents many women from doing more skilled work. The capable and intelligent workers are sometimes promoted to be forewomen.

*General Conclusions in regard to End of War.* In some firms, the women are likely to continue after the war. In others, the trade unions are likely to make this impossible. A large number of women will return to their pre-war occupations—commercial and otherwise—though the fact that so many of them are earning higher wages at present makes it difficult to predict what they will do in the future.

### 3. HOURS OF LABOUR

(a) **SHIFT SYSTEMS.**—The working hours are mainly divided into two shifts—a day and a night shift. In one large factory, a three-shift system prevailed. In the shell factories, a day and night shift for women are usual. It is usual for women to take alternate periods of a fortnight on day and night work.

(b) **WEEKLY HOURS.**—The hours vary from 50 to 60 weekly. Night shifts are shorter than day shifts: in one factory they worked  $48\frac{3}{4}$  hours on the night shift, and at two of the largest factories visited there were three breaks in the night shift. As regards the day shift, it was found that, in addition to the meal hour breaks, in most shell factories there were two short breaks at 10.30 a.m. and about 4.30 p.m., when it was possible for the women to make tea in the shop.

(c) **OVERTIME AND SUNDAY WORK.**—Overtime varies with the Factory Order. Generally the amount of overtime per day varies from  $\frac{1}{2}$  to 2 hours. In one munition factory (in normal times,

a large pen factory), in which, even before the war, women were largely employed, overtime was voluntary. In a large firm, women on thread milling and cartridge case work were allowed to do overtime till 8.30 p.m. In most of the munition firms visited there was no Sunday work for women. In one munition firm, some of the women worked about one Sunday in five, and then only in case of special emergency.

(c) TIMEKEEPING.—The majority of the employers were agreed about the good timekeeping of the women. The night shift has been found the most difficult: owing to women's home claims, this is inevitable. In one large munition firm where many married women were employed, the women were found to be very bad timekeepers.

(d) GENERAL OBSERVATIONS.—It has been found that, though the weekly hours of men and women are nominally the same, and the conditions of labour are practically identical, the women are giving as great satisfaction to the employers as the men. It is not possible at this stage to say whether this would hold in normal times, or whether it is due to any special effort they are making at present which may lead to collapse when the war is over. One must also take into consideration the fact that there are several modifications (*e.g.*, more frequent rest intervals) in conditions of labour than before the war.

#### 4. RATES OF WAGES AND EARNINGS

In the large shell factories the minimum weekly wage is 20s. per week for women of 18 and over engaged upon unskilled and semi-skilled work. In some factories this is paid by a time rate, and in others by a piece rate with a time basis. For women trained at a technical school in munition work, the minimum wage is 25s. In some cases, a war bonus of 10 per cent. is given for good timekeeping. Before the Ministry of Munitions Order established the time rate of 20s. as a minimum, a rate of 18s. was common, with a war bonus. When the Order came into force, the bonus was cancelled.

Rates of wages are the same for men and women where women are doing men's work; where different, the women's rates are lower.

In one firm, 25 per cent. additional wages were paid on night shift work, which was only occasional; 50 per cent. above the

ordinary wage is given for overtime; and where Sunday work is done, employees are paid double wages.

The time rates paid to women in other than shell factories vary considerably.

In one sheet metal firm, the time rates for men and women compare as follows—

Women . . . .	4d.-7d. per hour
Men . . . .	9d. " (minimum)

The actual earnings of the men come to 1s. to 2s. per hour.

In a firm engaged in munition work, the time rates compared as follows—

Women . . . .	8d.- 9d. per hour
Men . . . .	10d.-11d. "

In this firm, a war bonus is given in addition.

In firms where the work done by women is the same as the work done by them before the war, the rates have not come up to the war minimum.<sup>1</sup>

Time rates are more usual for women, except in shell factories where piece rates are almost universal. Piece work prices are generally fixed to allow the average worker to earn 25 per cent. over the time rate. The piece rates of women in shell factories cannot be compared with those of men, because the work is not the same.

The actual earnings of women vary very much above the minimum, many getting between 30s. and 35s. weekly, and some going up to £2 and even £2 10s.

## 5. EFFICIENCY OF LABOUR

In heavy capstan work, women were able to do three-quarters of the men's work ; on light capstan work, women were able to turn out more than men. In several large firms, the output of men and women was equal; and in the turning out of small articles, the women's output was considerably more. Some firms stated that the women turned out more than the men, because the trade unions prevented the men turning out all they might have done.

Nearly all employers agree that women are giving great satisfaction.

<sup>1</sup> This was written before the issue of the orders under the Munitions of War (Amendment) Act, 1916, fixing minimum rates for women engaged on work which, before the war, was recognised as women's work.

Some firms have found that the fact that women doing men's work must receive men's wages has caused trouble amongst the women doing women's normal work, as their wages are so much lower. To avoid strikes women are put in youths' places and the youths are put in men's places.

Several firms prefer to take girls straight from school and let them work up. If older women are taken on and started at top wages, the younger ones strike.

## 6. CONDITIONS OF LABOUR

The war, bringing with it a great influx of women into new industry, has necessitated great changes in the conditions of factory life. Employers have improved certain conditions in the factories, allowing more frequent rest intervals, etc., in order to help the women to stand the increased physical strain.

(a) HYGIENIC AND SANITARY CONDITIONS.—Where the workshops are entirely new, ventilation, light, and cleanliness are noticeably good. Where workshops have had to adapt themselves without being able to extend, in some cases the workrooms appear too small, and to have insufficient light and air. In some cases, temperature seems higher than desirable, because of the nature of the processes, the overhead lighting, and the material of the building.

Lavatory and closet conveniences are generally suitable, hot and cold water being provided. In one large factory, the arrangement for regularly douching the floors with a disinfectant gave a freshness particularly admirable. Cloakrooms, in some cases, were good and ample; in other cases, only racks at one end of the work-rooms were provided, or passage-hanging accommodation was allowed.

(b) PROVISION FOR MEALS.—Large mess-rooms are provided for the workers in all the new shell factories, and very well equipped kitchens. These mess-rooms are spacious, airy, and well lit; and hot meals are served at certain intervals and at very reasonable prices.

In one factory, a hot lunch was provided for 7d., including meat and vegetables; and in another it only cost 4d. In some cases, the workers brought their food with them, and had what hot drinks they needed. At one of the largest factories, beer was sold on the premises at the lunch hour: one pint to men and half

a pint to women. The head forewoman considered that this arrangement made for less drunkenness, as there was less going to the public-house. There was no marked desire on the part of the younger women to avail themselves of this opportunity.

In one of the older factories, a canteen was run in the lunch hour for the workers by a Birmingham High School Old Girls' Association.

In some firms, women are allowed to have tea in the workrooms: in one case at stated hours and in another case when they wish it. Boys employed by the firm prepare the tea, but the materials are supplied by the workers. In some large factories, fruit may be obtained in the mess-room during the dinner hour.

(c) PHYSICAL STRAIN, FATIGUE, AND LIABILITY TO ACCIDENTS.— When the longer shift was being worked, the women showed in one factory a good deal of fatigue, which has been lessened through the new three-shift arrangement. The work, as a whole, is so new, that it involves the use of muscles which women do not usually employ, and this has involved a great strain for the first month or two. At the same time, the women workers of Birmingham district have long been accustomed to work involving physical strain (*e.g.*, chain making), and do not feel bad effects so much as women in other districts.

The opinions vary as to the relative carelessness of men and women in proximity to machinery. Some say that women are less clumsy and naturally more careful. In many of the new factories, the women wear overalls and caps, which lessen the risks, and machinery is carefully fenced.

In one firm there was some slight risk in lead soldering. The women who have replaced men in the fuse huts have light work, but it is very dangerous, and was previously considered only fit for men. It consists of hammering in small screws and putting on red paint marks. In the stamping out room, the work was hard and in a hot atmosphere, and red hot metal was used in the process. The hours were long, and the continued application made for over-fatigue. This led to straying attention and consequent liability to accidents.

Ambulance rooms and rest rooms are provided, with nurses in attendance, in all the new factories. In two of the largest factories, seats are provided in certain of the workrooms, and are largely used. Apart from the signs of fatigue, the physical condition of

the women seems surprisingly good. This may be due to a higher wage or to better conditions of working than they previously had. Great insistence is laid, in one factory, on women being away before and after confinement for a sufficient length of time. In this same factory, all workers newly engaged are examined at the Labour Exchange Office, in connection with the firms, by a nurse; hair and body are examined for cleanliness, and special attention is paid to varicose veins—those suffering from this complaint being periodically examined.

As the welfare of women workers is so essential, many large firms have appointed lady welfare workers to attend to the well-being of their female employees.

## 7. HOUSING

When many girls began to come into Birmingham from a distance it became necessary to do something to insure that they secured satisfactory lodgings. Some of the largest munition firms have dealt with this matter themselves. They advertise for lodgings in the *Birmingham Daily Post*, and keep a list of available and suitable lodgings. These lodgings have to be visited before they are recommended and, when they are taken by a worker, they are periodically visited. Whenever a girl leaves her lodgings, the land-lady has to report it to the firm, and an inquiry is made as to the cause. Rooms that have proved unsatisfactory are put on a "black list."

Besides this, the matter has been dealt with by the Public Health and Housing Committee of the City Council. This committee opened an office, to which addresses of vacant lodgings were sent, and the munition workers could apply at this office when they arrived in Birmingham. Whenever an address was received, it was visited by a health visitor, who judged if it was suitable, cleanly, and so forth. No lodgings in back-to-back houses were recommended. This office is no longer open all day, as the need is not so urgent; and comparatively few new workers are coming in.

No new buildings have been put up to accommodate the workers, but the Y.W.C.A. has opened a hostel to provide temporary lodging for girls coming from a distance and arriving in the evening. They can only stay here for a night or two until they find rooms elsewhere.

It might be thought that the numbers of women and girls pouring

into the town to undertake work in munition factories would be likely to cause great overcrowding, as the housing accommodation was already so inadequate. But in a great number of cases the girls are being lodged in the houses from which men have left to join the Army, so that little extra overcrowding has resulted.

Some difficulty is occasionally experienced by the girls in paying their rent, which is usually from 12s. to 14s. per week, as in some firms their wage is not paid till the end of the second week—one week's wage being held back to prevent the girls leaving. When this occurs, the Y.W.C.A. occasionally advances money, which is not always repaid.

Many women have long tram journeys to and from their work.

### 8. THE TRADE UNION ORGANISATION OF WOMEN

(A) ORGANISATION.—A number of trade unions in Birmingham and district accept women members. Figures for Birmingham alone are not available; and those given below, applying to the Midland area, are only approximate.

#### UNIONS IN MIDLAND AREA WHICH ACCEPT WOMEN MEMBERS

Name.	Approximate No. of Women in the Organisation.
National Federation of Women Workers . . . . .	8,000 to 10,000
Gas Workers' Society . . . . .	Less than 1,000
Tailors' and Tailoresses' Society . . . . .	4,000
Workers' Union . . . . .	6,000 to 10,000
Gas, Municipal and General, Workers, Birmingham .	Less than 600
Lock, Latch, and Keysmiths, Willenhall . . . . .	500
Harness Furniture and Saddlery Association, Walsall	" "
Midland Leather Trades Federation, Walsall . . . . .	200
Tramwaymen's Association . . . . .	500
	?

The first four Unions mentioned above accepted women members before the war; in the case of the last five, the rules have been altered since to admit women.

The total number of women and girls employed in the Midlands is about 200,000, of whom, according to the above figures, considerably less than 30,000 are organised.

(B) ATTITUDE OF THE WOMEN TO ORGANISATION.—The attitude of the women is not easily understood. That they know the value of union is seen in the ascertained fact that many women are now paying the Union fees of the men they replace, in order to keep their membership going. But the failure of the women themselves

to organise, which was a recognised fact of peace-times, seems, in spite of male propaganda, to have continued during the war. The reasons alleged are—

(a) General indifference, illustrated in the statement: “We are getting good wages now, and the future will look after itself.”

(b) Lack of ability to act collectively. According to one (male) secretary, women will rush to join a Union at the time of a dispute, but a month later half of them will have given up membership.

(c) Many women consider themselves in industry for the period of the war only, and will not remain afterwards if a man wants the place.

(C) ATTITUDE OF THE MEN TO THE ORGANISATION OF WOMEN.—Before the war, skilled men were indifferent on the matter of female organisation, thinking that women would never compete with them. Since the introduction of women in such large numbers, the skilled men, fearing undercutting, have tried to induce women to organise. For the most part, this has been done by persuading the women to join a women's union. The A.S.E., for example, has agreed with the National Federation of Women Workers to give every encouragement to the women in the A.S.E. trades to join the N.F.W.W. Unskilled men are said to be, on the whole, indifferent on the question of female organisation.

(D) ATTITUDE OF MEN TO WOMEN IN INDUSTRY.—Birmingham has long had a large female industrial element, with a fairly distinctly defined sphere. But so far as the war has led to the replacement of men by women and the relaxation of Trade Union rules to permit of women's employment in new spheres, the attitude of the men is one of determination to have all pre-war privileges restored. They consider women well fitted for unskilled and repetition work; but say they need men to set the machines and supervise them.

(E) POST-WAR CONDITIONS.—It is believed in some Trade Union circles that, after the war, there will be a great demand for semi-skilled and unskilled labour rather than for skilled labour. If the sub-division of processes, which has been a feature in the metal trades, continues, the women who have become expert on a particular operation may displace skilled men. But this question is bound up with too many other post-war conditions to be capable of definite solution.

## CHEMICAL INDUSTRIES

## GLASGOW

In Glasgow, the area of this inquiry, there are no industries connected with the manufacture of explosives.

The inquiry has, therefore, been confined to the chemical industry, which appears to connote two distinct classes of manufacture—

(a) Chemical manufactures, including the manufacture of artificial manures, such as guano and superphosphates; bi-chromate of potash; bi-chromate of soda; chromate of soda; sulphuric acid; and the by-products, sulphate of ammonia and tar.

(b) Manufacturing chemists, including the manufacture of soaps, toilet and household requisites, boot blackings, and the preparation of patent medicines and drugs.

In (b) inquiries have shown that the units are very small; many of them have temporarily suspended business, partly because of dependence upon Germany for the basis of drug preparations. Investigation of one firm has disclosed the fact that the war has made no change in the numbers employed, these having always been women. Further, general questioning appears to point to there being no change in the employment throughout the industry.

In (a), investigation was made into two firms; one, the largest of its kind, of which there are only three in Scotland, is situated just beyond the Glasgow city boundary. It was, however, deemed necessary to include this firm, as many of its employees reside within the city boundary.

TABLE SHOWING MOVEMENTS IN NUMBERS IN

(a) FOR ONE FIRM WHOSE INDUSTRY IS CLASSED AS DANGEROUS  
BY THE BOARD OF TRADE

Class of Employ- ment.	MALES ONLY.				FEMALES ONLY.				Decrease or Increase.
	No. em- ployed before War.	No. on Service.	No. em- ployed now.	Re- place- ments.	Em- ployed before War.	No. em- ployed now.	Taking place of Men.		
Unskill- ed light labour	800	10%	650	nil	nil	12	nil	—	

1. The shortage of men (shown in the above table) is in no way counterbalanced by the small numbers of women employed. The nature of the women's work (*e.g.*, lining barrels with wall paper,

sewing bags, packing hampers, and unloading and counting bricks) appears to point to replacement of boys only, and confirmation of this view seems to be given by the statement of the management to the effect that the "apprentices" have all been dismissed and that the women's labour is more satisfactory than the labour usually employed.

2. The weekly wage is 21s., there being no overtime or war bonus. The wage paid the boys is not given, but in all probability it would be considerably lower than that paid the women. The increased wage paid was no doubt offset by the better service rendered by the women.

3. In unskilled light labour, the manager expressed the opinion that the women would become a permanency. In labour of a heavier type than that alluded to above (*e.g.*, shovelling back mineral), he thought women might come to be employed. For unloading mineral from railway wagons women were unsuitable, because of the very heavy nature of the work. The experience was that two women were required to do the work of one man.

The inquiry into the second firm under (a) gives the following particulars—

This industry is mainly engaged on the manufacture of artificial manures.

During the war, 70 to 100 women have been employed on the unskilled work of filling sacks, in the place of men of the casual labour type. For this work, women receive 20s.; men, 25s. per week.

No figures as to hours were obtainable, but the fact was established that the number of hours for men was greater than the number of hours for women. It was affirmed that it took two women to do one man's work. Timekeeping by women was good as compared with men's. The work is seasonal, and the duration of employment is fixed by the demands of farmers when preparing ground for crops. Difficulties of delivery having arisen, farmers are being induced to order in advance, and it is hoped, in this way, to reduce the number employed and to provide work over the whole year for these women.

The manager expressed the opinion that if the authorities allowed women to be employed for the same number of hours as men, it might be advantageous for squads of both sexes to work together. It is assumed, that if such were possible, the heavier

work would be done by men, and that the women would act in the nature of helpers to the men.

*Conclusion.* The inquiry in respect of these two units seems to establish the following points—

1. That in the chemical industry there have only been replacements by women in light unskilled labour,<sup>1</sup> which in one case was formerly undertaken by men and in the other by boys.
2. That in this class of employment the capacity of output of women is equal to only half of that of men.
3. That the permanent employment of women in this industry in unskilled labouring tasks is, and will be, subject to—
  - (a) Better timekeeping, resulting in better co-ordination with the other parts of the machine;
  - (b) relaxation of Governmental restriction of women's hours.
4. That where women have replaced men, the wage is less by 15 to 16 per cent.
5. That there will be a tendency to extend the employment of such women to heavier, unskilled work subject to—
  - (a) Relaxation of Governmental restrictions in the employment of women in particularly dangerous forms of labour;
  - (b) the capacity of women to endure heavy, physical toil, and to keep up the output to standard.

## THE TEXTILE INDUSTRY

### GLASGOW

The textile industry in Glasgow is a declining one. Prior to the war, a considerable shortage of skilled labour, especially of skilled female labour, prevailed. Trained labour is an important element in the economy of production, and the high prices of labour and the attraction of so many other industries in Glasgow and its environs operate adversely upon the textile trades.

The undernoted table shows the number of men and women employed in the industry according to the Census of 1901 and 1911, and the percentage decrease over the same period—

<sup>1</sup> It would seem, however, that in some districts women have replaced men in other than light unskilled labour.

FABRICS.	Census 1901.		Census 1911.		1911. Increase or Decrease per cent.	
	Males.	Females	Males.	Females	Males.	Females
Cotton . . . . .	1,031	5,815	1,378	5,638	+ 33·6	- 3·04
Wool and Worsted . . . . .	226	939	198	460	- 12·39	- 51·01
Silk . . . . .	81	668	18	51	- 77·77	- 92·36
Flax, Linen, Jute, & other fibrous materials . . . . .	305	541	331	329	+ 8·52	- 39·19
Lace . . . . .	210	348	268	494	+ 27·61	+ 41·95
Carpet, Rug, Felt, etc. . . . .	552	1,180	583	1,771	+ 5·61	+ 50·08
Mixed or Unspecified Materials . . . . .	1,472	5,590	597	2,471	- 59·43	- 55·79
Bleaching, Printing, Dyeing, etc. . . . .	1,120	833	1,235	935	+ 10·26	+ 12·24
Total . . . . .	4,997	15,914	4,608	12,149	- 7·78	- 23·65

The present inquiry completely covered two branches of the industry in Glasgow, namely, lace and carpets, and it is estimated that information has been obtained from firms employing at least 50 per cent. of those engaged in the cotton trade.

From the following table it will be seen that, since the outbreak of hostilities, the decline in the numbers employed has continued in a marked degree. The women are being attracted to munition factories and to the employment of the Corporation Tramway Department by the higher wages paid.

Fabric.	Males.				Females.				Decrease or Increase.
	Em- ployed before War, 1914.	On Ser- vice.	Em- ployed 1916.	Re- place- ments.	De- crease or In- crease.	Em- ployed before War, 1914.	Em- ployed 1916.	Taking place of Men.	
Lace . . . . .	183	68	103	Not known	- 80	302	184	24	- 118
Carpets . . . . .	713	257	612	157	- 101	1,897	1,801	20	- 96
Cotton . . . . .	527	106	411	Not known	- 116	2,300	1,826	26	- 474
Total . . . . .	1,423	431	1,126		- 297	4,499	3,811	70	- 688

It should be noted that the figures given above include, in the case of two firms, the number employed in the office and warehouse. It was estimated by the employer that the number engaged in these departments in the carpet trade totalled: Men, 35; women,

45; and the number of women therein taking the place of men was 18. In the cotton trade, the number was quoted approximately as 15 men, 33 women; and the number of women taking the place of men was 14.

There should be added to the number given in the above table, as employed in 1916 in the cotton branch of the industry, 163 men and 997 women, who were not included, as no particulars were obtained in respect of them, save that one woman was replacing one man. It will, therefore, be seen that the inquiry covered firms employing 1,289 men and 4,808 women; that the total number of women taking the place of men was 71, of whom 32 were engaged in clerical work, leaving 39 replacements in textile occupations.

The processes in which women have replaced men are as follows—

In one firm, 19 women have replaced 13 men in threading and filling carriages; in another, 4 women are employed in threading and 1 in card punching. In cotton, the women are employed as warpers, ingivers, harness-helpers, tape-helpers, and waste-packers. One foreman in the twisting department was replaced by a forewoman. The difficulty of obtaining skilled and unskilled labour; the long period of training necessary to fit the unskilled, together with the heavy nature of the men's work and the unsuitability of women's clothing amongst swiftly moving machinery, prevent the entire replacement of the men who have gone on service.

The replacements have been so few in number, that no change in plant, organisation, or process has taken place.

According to the opinion of the manager of a lace factory, women in threading and brasswinding (replacement in the latter process took place prior to the war) have proved as satisfactory as men and could completely replace them. It is anticipated that women's employment in these processes will continue after the war. In threading, meantime, women are receiving the same rates of pay as the less experienced men, and 1d. per 1,000 shuttles less than skilled men.

A director of a large weaving factory submitted as his experience that heavy work required two women in place of one man, but, with that reservation, women have proved as satisfactory as men. It would entirely rest with the women themselves (he said) whether their employment in some branches continued or not. The men

are working in most cases sympathetically and helpfully, but the women, in his opinion, will require, in emergency, to lean less on the men than they are doing at present. Employers reported an influx of orders, both for home and export trade, and delay in their execution through lack of workers. One firm reported that 230 looms were standing idle, and another notified vacancies for sixty women weavers.

The conclusions which may be drawn from the inquiry are that the replacement of men by women in the textile industry in Glasgow is negligible, and that there is and will remain a demand for every type of worker skilled in the industry.

## PRINTING AND ALLIED TRADES

### 1. LONDON<sup>1</sup>

EFFECT OF THE WAR ON THE TRADE IN GENERAL.—When this trade was investigated in July, 1915, it was found that the general decrease in work was such that the supply of existing labour adequately met the demand. The interim<sup>2</sup> report of the British Association states that: "The effect of the war on the trade is mainly one of depression, and only in isolated instances are women doing work new to them or being employed in larger numbers in their own processes." Our inquiries (in 1916) have shown that, while work (compared with pre-war days) continues to be more or less slack in the smaller firms (those employing less than fifty persons), any decrease of work in the larger firms has been outbalanced by the scarcity of labour. And where women have not been substituted for men, it has been on account of some natural or artificial restriction rather than the fact that there is sufficient male labour to meet the demand.

Of the thirty-six firms giving information, thirty were experiencing a shortage of labour; one firm (employing 150 persons,

<sup>1</sup> For this investigation, information was obtained from 36 firms, trade union secretaries, and others interested in the trade. In view of the insufficient numbers, a draft of the report was submitted to several leading men in the trade (both unionists and non-unionists); and since they assured us that this was illustrative of the general condition of the printing trades in London at present, we feel justified in regarding this report as applicable to the area under consideration.

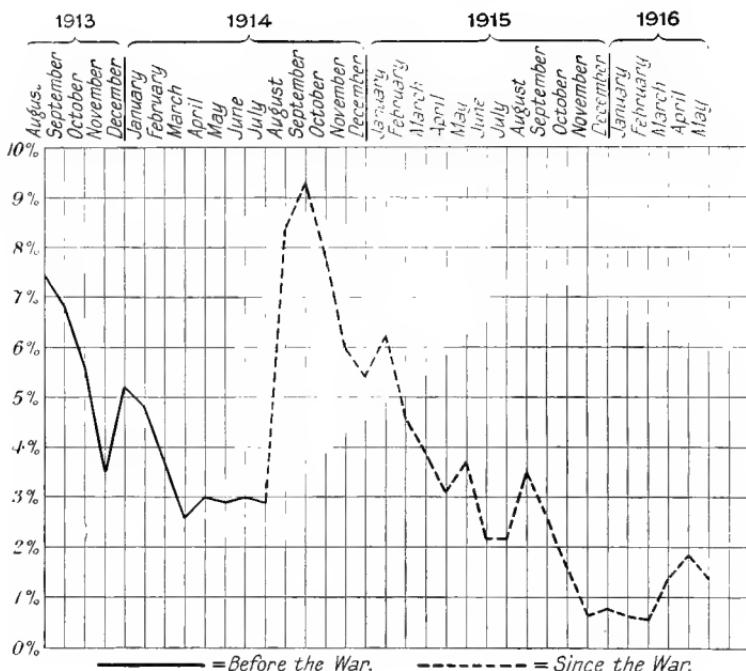
<sup>2</sup> Cf. *Credit, Industry, and the War*, p. 182.

THE FOLLOWING TABLE SHOWS THE INCREASE OR DECREASE OF PERSONS ENGAGED IN PRINTING AND ALLIED TRADES, IN ENGLAND AND WALES, DURING THE PERIOD, 1901-1911

Census of 1901.				Census of 1911.				Increase or Decrease per cent.			
Persons.	Males.	Females.	Persons.	Males.	Females.	Persons.	Males.	Females.	Persons.	Males.	Females.
Total of Printers, Lithographers, Bookbinders . . . .	149,793	119,834	29,959	184,075	140,968	43,107	+ 22.9	+ 17.6	+ 43.9		
Printers—											
Hand Compositors . . . .				37,883	37,281	602					
Machine Compositors . . . .				3,803	3,711	92					
Printing Machine Minders . . . .				7,982	7,773	209					
Stereotypers, Electrotypes . . . .				2,771	2,761	10					
Others in Printing (including undefined) . . . .				85,198	63,736	21,462					
				137,637	115,262	22,375					
Lithographers, Copper and Steel Plate Printers . . . .	11,725	10,682	1,043	15,029	12,746	2,283	+ 28.1	+ 19.3	+ 118.9		
Bookbinders . . . .	31,887	12,664	19,223	31,409	12,960	18,449	- 1.5	+ 2.3	- 4.9		

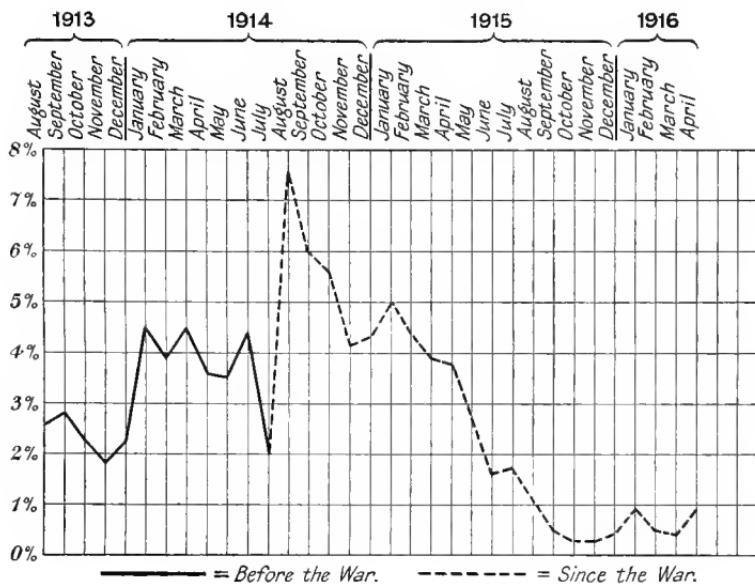
whose works were outside the London area) had, on the contrary, increased its staff since the war ; the remaining five firms (all employing under 50 persons) had suffered so heavily from a reduction of work, that they could execute this with their remaining staff.

This shortage of labour is also shown by the statistics published by the Board of Trade—



*Percentage of unemployment in London among Trade Union Members in the Printing Trade.*

	1913.	1914.	1915.		1914.	1915.	1916.
August .	7.4 .	8.3 .	3.5 .	January .	4.8 .	6.2 .	0.7
September .	6.8 .	9.3 .	2.7 .	February .	3.7 .	4.8 .	0.5
October .	5.6 .	7.8 .	1.6 .	March .	2.6 .	3.9 .	1.4
November .	3.5 .	6.0 .	0.7 .	April .	3.0 .	3.1 .	1.8
December .	5.2 .	5.4 .	1.0 .	May .	2.9 .	3.7 .	1.4
				June .	3.6 .	2.1 .	—
				July .	2.9 .	2.1 .	—



*Percentage of Unemployment in London among Trade Union Members in the Bookbinding Trade.*

	1913.	1914.	1915.		1914.	1915.	1916.
August	2.6	7.5	1.1	January	4.5	5.0	0.9
September	2.8	6.0	0.5	February	3.9	4.4	0.5
October	2.3	5.6	0.3	March	4.5	3.9	0.4
November	1.8	4.1	0.3	April	3.6	3.8	0.9
December	2.2	4.3	0.4	May	3.5	2.7	—
				June	4.4	1.6	—
				July	2.0	1.7	—

This scarcity was felt before the Military Service Act, owing to the double drain of enlistment and the transfer of men to munition work..

*Decrease in Work* has been caused by—

1. The decrease in demand for certain kinds of printed matter.
2. The reduction in the size of newspapers.
3. The difficulty in obtaining paper.
4. The scarcity of metal.

*Increase in Work* has occurred in some of the larger firms on account of Government contracts.

*Introduction of Women in General.* Of the firms investigated—  
 23 had introduced women, in one or other capacity, since the war;  
 1 was completely staffed by women before the war;  
 12 (with one exception, these were all small firms) had neither  
 introduced women, nor increased their employment in those  
 processes in which they had previously been engaged.

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36 = total number of firms giving information.

In no case did we hear of any alterations in, or introduction of, machinery with the view to facilitating the employment of women.

**DETAILED EFFECTS IN THE DIFFERENT PROCESSES.**—In *Hand Composition*, although the actual placing of the type in the “stick” demands skill and dexterity, it is not heavy work; but the subsequent processes connected with the frames and formes require much physical strength, some of the larger formes needing two or three men to lift them.

We found that—

Two firms (or  $\frac{1}{18}$  of those giving information) had employed women compositors before the war (one is entirely staffed by women and managed on a co-operative basis; the other is an open house); and that

Two firms (or  $\frac{1}{18}$  of those giving information) had introduced women (on a small scale) since the war. (Both these are non-Union houses.)

*Machine Composition.* The most common types of machines which have been introduced to do the work of the hand compositor are the linotype and the monotype; these are only used by the larger firms.

*Linotype* work is highly skilled, and some of the processes require much physical strength; all linotype operators in London have served a seven years' apprenticeship. None of the firms giving information employed women on this kind of machine.

*The Monotype Machine* is smaller than the linotype, but requires two processes. The first process is not heavy work, being very similar to typewriting; but the other processes entail a considerable amount of lifting, and are highly skilled.

We found—

Three firms (or  $\frac{1}{12}$  of those giving information) which had employed

women on the monotype machine (first process) before the war, and these have increased the number since. (These are all non-Union firms; and though their offices are in London, two have their works outside London.)

We did not hear of any firms employing women on the casting machine.

To minimise the loss caused by those who are serving with the Forces or doing munition work, employers and employees have resorted to the following adjustments—

1. More frequent recourse to overtime. The Trade Union maximum allowance is eight hours' overtime per week.
2. The substitution of boys and semi-trained apprentices for men.

With regard to London, there has been but a negligible attempt to substitute women compositors for men. The reason is partly to be found in the fact that London is in a peculiar position with regard to the printing trade. The business consists in a maximum of newspaper, jobbing, and emergency work, with a relatively small amount of book printing. Consequently, it is only practicable to employ those who can work at night and for long stretches at a time. Apart from any other reasons, women are prohibited from this by the Factory Acts.<sup>1</sup> There has been no official relaxation of these in the printing trades during the war. It is difficult to obtain information, but in certain cases we were told that breaches of the law were allowed to pass unnoticed. This, however, could only occur in isolated cases.

Another feature peculiar to the London Printing Trade is the strength of the Compositors' Union. This Union is willing to admit women members, provided they join under the same conditions as the men (*i.e.*, that they earn the same minimum time wage and have served the seven years' apprenticeship). So far, these conditions have prohibited the introduction of women on any appreciable scale.

Furthermore, the Unions seem to feel that the indiscriminate introduction of women into the trade would be dangerous, partly

<sup>1</sup> According to these, women may only be employed in factories from 6, 7, or 8 a.m. till 6, 7, 8 p.m. respectively. In certain industries, including printing, they may work two hours' overtime for not more than thirty days in the year, and then not more than three times a week. Moreover, a woman may not work more than five hours at a stretch.

because this might tend to weaken their own organisation and increase the power of the employers, and partly because they feel that the nature of the work is detrimental to the health of women (*e.g.*, lifting the formes and other heavy work).

With regard to the exceptional circumstances produced by the war, the Unions fear that the women may undercut men's wages, as they are almost always willing to work for a lower rate than men.

Compositors require a long training, apart from Trade Union agreements; therefore, it is impossible for women to be suddenly introduced into this department.

As opposed to these views, some employers maintain that the trade would be benefited if women were widely introduced, since they could do all but the heaviest work, but they feel that this has been prevented by Trade Union opposition, which they condemn. They think that women are physically capable of doing the work, referring to the provinces where they are employed in this capacity. (As mentioned above, provincial conditions are not identical with those in London, on account of the quantity of newspaper work and jobbing done in the latter.) Some non-unionists oppose the long apprenticeship required by the Compositors' Union, stating that this is unnecessary; on the other hand, the Union upholds its system of apprenticeship to ensure (amongst other things) that its members know more than one process, and so increase their mobility and decrease unemployment during times of trade depression. There are also many employers who are, on the whole, in agreement with the policy adopted by the Union with regard to women compositors, thinking that they are unsuited to the work, and that a seven years' apprenticeship is essential.

As far as London is concerned, the conclusion arrived at by the investigation in 1904 still seems to hold good (*i.e.*, that "partly owing to the nature of the work done and partly to the power of the London Society of Compositors, no systematic attempt seems to have been made generally to introduce women compositors into London houses since 1878").<sup>1</sup>

Much of the work included in a compositor's duty is too heavy for women, although they could undoubtedly do the actual "composition"; but, broadly speaking, they are prohibited from this

<sup>1</sup> See *Women in the Printing Trades*. Edited by J. Ramsay MacDonald, 1904.

- (a) On account of the long apprenticeship, which, owing to their short industrial career, they are unwilling to serve;
- (b) because, for the same reason, employers are unwilling to train them; and
- (c) because employers are not prepared to pay them at the same rate as male compositors, since they have to employ men to do the heavy work (*e.g.*, lifting, etc.).

*Machine-minders and Managers* superintend the machines which print the impressions from the forms. Machines vary from small treadle machines, often worked by a boy, to large rotary and cylinder machines, on which the principal daily papers are printed at the rate of 25,000 to 50,000 copies per hour.

In only—

One firm (entirely staffed by women) did we find that women mind all the machines; here the work is restricted to handbills and monthly journals.

Four firms had introduced women to mind small platen machines (one of these was a Union firm, one an open house, and two were non-Union).

The nature of the London trade, also, in part, accounts for the difficulty of introducing women into this department. An ex-machine-minder said that where newspapers are printed, the lifting of the paper to and from the large rotary machines “nearly tears the inside out of even a man.”

Where books are printed, “women minders” can be introduced more easily, since the machine can be run for a considerable period without being re-set; but, apart from newspaper work, London is chiefly concerned with jobbing and emergency orders, in which the machines have continually to be re-set, and have to be worked at long stretches without a stop, often through the night. It is exceedingly rare for a woman to set a machine; thus it is impracticable for women to be employed as “minders” only, since they would be idle for a large proportion of their time. (Where women are employed in this capacity, in the provinces and Scotland, they are always prepared to work at knitting and needlework whilst the men prepare the machines for them.) The difficulties and prohibitions of long stretches of work and night work are mentioned above.

However, women can, and do, to a slight extent, work the

smaller machines; but owing to the nature of the work, their employment, at any rate in London, cannot be extended to the larger machines.

The work of a machine-minder requires much skill and an apprenticeship varying from four to seven years is demanded; it also involves certain dirty and oily tasks which are often considered unsuitable for women.

The following methods of adaptation have been resorted to in consequence of war conditions—

(1) Boys and semi-trained apprentices have, to a certain extent, taken on the work of those machine-minders who have joined the Forces;

(2) firms have more frequently resorted to overtime;

(3) each man has had to mind more machines;

(4) in some cases, work has been refused, and machines are standing idle owing to the lack of minders; and

(5) women have been introduced to a small extent in London. The Platen Printing Machine Minders' Society only caters for those employed on machines which are too heavy for women; therefore the question of their introduction has not arisen. But the National Society of Operative Printers and Assistants is open to persons of both sexes employed in the capacity (amongst others) of minders of folding machines, cropper, platen, and rotary letterpress machines. In London, the female membership of this Society has risen from 176 in April (1914) and 178 in April (1915) to 236 in April (1916).

Conditions of membership are equal for men and women, but contributions and benefits vary according to wages. Female members of this Union are prohibited from performing the laborious and dirty work, and in view of this their rate of wages is 3s. below that of the existing scale for men.<sup>1</sup>

On the whole, employers are agreed that it is impossible for women to be widely employed as machine-minders, though some of them consider that the dirty work would not hurt them. As one foreman remarked: "If they wore overalls and used plenty of soap, they would be none the worse." The real difficulties are—

- (1) Lack of training;
- (2) Heavy work; and
- (3) Restrictions imposed by the Factory Acts.

<sup>1</sup> See "Wages," p. 183.

*Printers' Assistants and Machine Rulers and Feeders* (layers-on and takers-off). A layer-on places the separate sheets of paper in position on the machine, which then proceeds to make the impression. A taker-off is sometimes employed on some of the machines to remove the printed sheets. A printers' assistant not only feeds the machines, but also oils them and cleans the rollers, etc. Machine ruling is a separate branch of printing (*i.e.*, the marking of lines for account books, ledgers, forms, etc.). The ruler's work consists of setting up the pens in the required position, and in regulating the supply of ink. Boys, girls, and women were employed to a certain extent as machine feeders before the war, though only to a limited degree in London. Adjustment by the introduction of women seems to have taken place to the greatest extent in this department of the work.

Four firms had employed women in this capacity before the war (one Union, one open, and two non-Union houses); three of these have increased the number of women thus employed, and have transferred some of them to larger machines.

Nine other firms have introduced women as layers-on since the war (three of these are Union houses).

(Only a small proportion of the firms giving information are engaged in machine ruling. We did not find any firms where women were minding these machines, but in one case they were feeding them.)

On the whole, women are not employed in the capacity of printers' assistants. Cleaning the machines is considered too dirty for them, and they have rarely had the necessary training to understand the technicalities of the machines; in addition to this, some of the work is very heavy.

There has been some difficulty in settling the rate of wages for women feeders, since they are often unable to lift the wads of paper on to the machine, and thus do not do exactly the same work as the men. One employer stated that it takes 10 women and 3 men to do the work formerly done by 10 men. In view of this, the National Society of Printers' Operatives and Assistants has come to an agreement whereby the women's minimum time wage is 3s. below the existing wage for men.

It takes from two to six months for a woman to become an efficient layer-on; and where the work is limited to laying on, it is

not heavy, though entailing a considerable nerve strain. The comparatively short training greatly facilitates the introduction of women in this department, the majority of those thus employed being transferred from the folding, stitching, and warehouse departments.

The following methods of adaptation have been resorted to in consequence of war conditions—

- (1) The increased employment of women;
- (2) Where boys have been available, they have been engaged in this capacity;
- (3) There has been more frequent recourse to overtime; and
- (4) With regard to book printing, etc., the orders have had to wait over, since there are fewer people to execute them.

The National Society of Operative Printers and Assistants is open to female machine rulers, layers-on, etc., since the former were not admitted to the Machine Rulers' Union.

The women's branch of the National Union of Paper Workers admits women book-folders and machine rulers, but does not countenance layers-on in the machine room, since many of the jobs are considered too heavy for them. On the whole, the Unions have relaxed their agreements in this department of the trade, and have permitted the employment of women (sometimes supplying the women themselves) on machines which were formerly prohibited to them.

Generally speaking, employers are availing themselves of women feeders as far as possible, the great drawback being the prohibition of night work. However, the National Society of Operative Printers is making its agreements on the assumption that women have permanently entered this department.

*Readers* are employed by the larger firms to read the MS. to the compositors, and to correct the first proofs, etc. In London, this work was usually done by boys.

Amongst those investigated, we found—  
Seven firms which had substituted girls (three of these are Union houses).

As in the other processes, women are not employed in London as readers for newspapers, since it means night work. As the Printers' Revisers and Readers' Assistants' Society only deals with this part of the trade, it has no women members.

The Trade Union Secretary told us that, although girls cannot be used for newspaper work "owing to the scarcity of boys, employers are using girls as copyholders on day work in the general printing house"; and that "in many cases they are receiving more wages than boys," on account of the fact that the majority of the boys formerly used were apprentices to composing.

In many cases, reading proves a "blind alley" trade for boys; and, on the whole, the Unions do not object to the introduction of women, provided they maintain the standard rate of wages.

*Stereotyping and Electrotyping* are processes whereby metal duplicates are made from relief printed surfaces. In only one firm (non-Union)<sup>1</sup> did we find any attempt to introduce women into the stereotyping process, and as the experiment only extended to one girl, it cannot be said that women have been introduced into this process. The Trade Union opinion is that their employment would be impracticable, the trade being of a "highly skilled and technical nature combined with work of a laborious character."

*Lithography* is a surface process of reproduction from a specially prepared stone, or from an aluminium or zinc plate. We found one non-Union firm which had trained women for this work since the war. In the opinion of a Trade Union Secretary, apart from the long training required, lithography is too heavy for women, the weight of the stones frequently being injurious to men.

*Warehousemen* are employed in connection with the storage of paper and its distribution to the working staff. We did not find any firms which had introduced women into this department for the first time; but three firms (two being Union houses) had employed them in this capacity before the war, and had since increased the numbers thus employed.

*Folding.* Hand-folding was found to be exclusively done by women and to be universally recognised as a woman's work.

Those firms which possessed folding machines employed women on them; and where men had also been employed, the numbers of women had been increased since the war.

#### BOOKBINDING

*Folding, Stitching, and Collating* was done by women in those firms giving information.

<sup>1</sup> This firm has its works outside London.

*Actual Binding.* This is heavy work, and, in London, is usually done by men. We found that one firm (non-Union) had introduced women for the cheap flush binding, which is not such heavy work.

*Guillotine Cutting, Typefounding, etc.* In no cases did we find women engaged on these processes, the work requiring considerable physical strength.

TABLE SHOWING THE EXTENT OF EMPLOYMENT OF WOMEN BEFORE AND SINCE THE WAR IN THE VARIOUS PROCESSES AMONG THE 36 LONDON FIRMS INVESTIGATED.

	Hand Compositors.	Monotype Operators.	Machine-minders and Assistants.	Machine-feeders.	Readers.	Stereotypers.	Lithographers	Warehousemen.	Folding, Stitching, Collecting.	Flush Binding.	Linotype Operators, Typefounding, Guillotine-cutting, Binding.
Number of firms which employed women before the war	2	3	1	4	0	0	0	3	36	0	0
Number of firms which introduced women since the war	2	0	4	9	7	1	1	0	0	1	0
Total number of firms employing women	4	3	5	13	7	1	1	3	36	1	0
Number of Trade Union Houses	0	0	1	4	3	0	0	2	23	0	0
Number of non-Union and Open Houses	4	3	4	9	4	1	1	1	13	1	0

BOARD OF TRADE EARNINGS AND HOURS INQUIRY,  
1906

(Based on Returns from 110,129 employees)

Men (over 20)	.	.	.	.	.	45.6	per cent.
Lads, Boys, and Apprentices (under 20)	.	.	.	.	.	17.4	"
Women	.	.	.	.	.	24.2	"
Girls (under 18)	.	.	.	.	.	12.8	"

## AVERAGE EARNINGS OF ABOVE

Trade.	Men.	Lads & Boys	Women.	Girls.
	s. d.	s. d.	s. d.	s. d.
Paper . . . . .	29 0	10 8	11 11	7 6
Printing . . . . .	36 10	8 7	12 3	6 4
Bookbinding . . . . .	34 1	8 8	12 10	6 6
Paper Stationery . . . . .	31 4	8 6	11 11	6 6
Cardboard and Boxes . . . . .	28 10	10 3	12 3	6 1
Wallpaper . . . . .	32 11	19 2	13 2	7 9
Process Blockmaking . . . . .	45 9	9 7	18 9	9 5

PERCENTAGE OF WAGES. *Working full time*

## Men

Under 12s. 0d.. . . . .	·1 per cent.			
s. d.      s. d.		s. d.      s. d.		
12 0 to 15 0 . . . . .	·5	40 0 to 45 0 . . . . .	9·7 per cent.	
15 0 „ 20 0 . . . . .	6·2	45 0 „ 50 0 . . . . .	5·0 „	
20 0 „ 25 0 . . . . .	15·2	50 0 „ 55 0 . . . . .	3·0 „	
25 0 „ 30 0 . . . . .	14·5	55 0 „ 60 0 . . . . .	1·6 „	
30 0 „ 35 0 . . . . .	20·9	60 0 „ 65 0 . . . . .	1·8 „	
35 0 „ 40 0 . . . . .	17·9	Over 65s. . . . .	3·6 „	

PERCENTAGE OF WAGES. *Working full time*

	Boys.	Women.	Girls.
s. d.      s. d.	Per cent.	Per cent.	Per cent.
Under 3 0 . . . . .	·5	0	1·3
3 0 to 5 0 . . . . .	8·4	·7	24·4
5 0 „ 10 0 . . . . .	54·9	25·8	64·0
10 0 „ 15 0 . . . . .	26·0	52·2	8·6
15 0 „ 20 0 . . . . .	8·9	16·5	·6
20 0 „ 25 0 . . . . .	1·2	3·7	·1
25 0 „ 30 0 . . . . .	·1	·8	0
Above 30 0 . . . . .	0	·3	0

COMPARATIVE VALUE OF MEN'S AND WOMEN'S WORK.—On the whole, the verdict of the employers is very favourable as to the value of women's work compared with that of men. Women are said to be loyal, conscientious, regular, punctual, and clean at their work. One employer found women readers slower than men, while two stated girl readers were better than boy readers.

Women compositors are said to be slower, but more accurate than men.

Women are generally slower at feeding the machines than men; in one case, we were told that a man would feed at the rate of

1,800 sheets per hour, while a girl could only do so at a rate of 1,200, the machine being capable of printing 3,000.

A Union Secretary said that women can work as quickly as men at any given moment, but that their staying power is weaker; and thus in a longer period, such as a week, their output is less.

One firm found the girls troublesome in the machine room, on account of flightiness. It must be added that these girls were recruited from rather a low class.

Apart from these objections, we were given the impression that women have proved far more efficient than was expected.

**SUMMARY OF REASONS FOR AND AGAINST THE INTRODUCTION OF WOMEN TO NEW PROCESSES.**—As mentioned above, the Trade Unions only oppose the introduction of women in so far as—

- (1) They would be physically injured by the work;
- (2) They would undercut men's wages;
- (3) They would possibly increase unemployment by flooding the market after the war, and since, through lack of training, they would be restricted to one process, and would tend to increase the hardship at times of depression.

On the other hand, those who favour the introduction of women argue that—

- (1) There are many strong women who could do the heavy work (instancing that printing is no heavier than the fishing done by girls on the east coast of Scotland);
- (2) Training is an over-rated difficulty, the long apprenticeship being unnecessary.

But the shortness of a woman's industrial career is universally recognised as an insurmountable objection to any widespread employment in the highly skilled processes.

Most of the employers giving information, mentioned lack of training (including short industrial career) and physical incapacity as obstacles to the further introduction of women.

Some employers stated that women would have been further introduced had it not been for the Trade Union agreements, whilst others found the Factory Acts to be the chief hindrance to the employment of women.

Other objections we encountered were lack of accommodation for women workers, the dirty nature of the work, and the custom and tradition of the trade.

WAGES.—(*Table of Wages from Wages Census of 1906*)—

		Trade Union Minimum Weekly Wage.	Non-Union Wages.
Compositors	.	45s. for 48-hr. week (without war bonus)	About 30s. Women frequently earn less in the provinces
Layers-on	.	24s. women (London)	From 8s. to 16s. (various)
Copyholders	.	Girl & Boy Copy- holders earn up to 16s.	
Folding	.	Generally paid piece-work, and can earn up to 25s. Usually earn considerably less.	

CLERICAL WORK AND MESSENGERS.—All the firms had made some alteration with regard to their clerical and messenger staff, and in many cases the employers stated that they preferred the women and would permanently employ them in that capacity.

## FORECAST

It is very difficult to forecast with certainty what will be the effect of the war upon the printing trades generally. The interim Report of 1915 states,<sup>1</sup> in conclusion, that as the trade's prosperity has so diminished owing to the war, it is probable that a return to the *status quo* will result when peace is declared. Our investigation, however, has indicated that the depression in the trade was more or less temporary in nature, and that at present employers are faced with the problem of securing labour as urgently as is the case in other trades. Consequently, some definite and far-reaching changes may be made with regard to the employment of women; and it is increasingly less likely that the trade will revert easily or at once to the old state of affairs at the end of the war.

This conclusion, drawn from the actual statements of individual employers, is supported by those of the leaders in the trade, but at present the fact that the problem is growing acute is more emphasised than the measures to be subsequently adopted. Most employers seem to hope that affairs will right themselves, expecting the termination of war to result in an increase in the number of marriages, which would thus absorb the superfluous female labour.

<sup>1</sup> *Credit, Industry, and the War*, 1915.

They are keeping open the places of the men who have gone to the war, and regard the employment of women on these processes as purely temporary. Some firms, however, state that they will retain their women after the war, nearly all declaring a preference for women over men clerks.

The great difficulty of giving definite conclusions is the general uncertainty as to what will be the state of trade after the war. In consequence, many employers could foretell nothing, and said they had made no plans for the future.

It may, perhaps, be safe to say that the obstacles in the way of the further employment of women in London printing firms are very great. In the provinces and in Edinburgh, where book printing is mostly done, these obstacles do not exist to such an extent, and women are more widely employed on a greater number of processes and, on the whole, are considered satisfactory. It is, however, impossible to tell what changes may be effected in London should the war continue for any length of time.

## PRINTING TRADE

### (2) BIRMINGHAM

The effect of the war on the printing trade in general in Birmingham during the past year (June, 1915–June, 1916) has been twofold: it has meant many men leaving the trade to join the Forces, and it has resulted in a decline of work. These two facts, to a large extent, balance one another; and the question of the shortage of labour has not become acute, and, therefore, the need of introducing women has not shown itself in any marked degree. And it still remains practically impossible for women to enter the highly skilled processes on account of the length of training required and the strict Trade Union regulations.

The decrease of work can mainly be accounted for by the fact that, in Birmingham, the trade is mostly commercial (*i.e.*, catalogue printing, etc.), and this has naturally declined during the war. Consequently, the introduction of women has been on a very small scale and in a limited number of processes.

During the war no women have been introduced to take the place of men as hand compositors, on the linotype or monotype machines, as machine-minders and managers, or on the highly

skilled work of electrotyping and stereotyping. Women have done machine ruling in many firms in Birmingham for some time, and the war has caused no increase in female machine rulers; and folding has always been women's work, and continues such.

It is in "feeding" or "laying-on" that the greatest change has taken place, and women have been introduced here to replace both men and boys. Two firms reported the introduction of ten women to take the place of men; and two firms the introduction of six women in place of youths. In one firm, women had for many years been employed on this work. The introduction of female labour in binding and in cutting, in both of which processes they were considered very satisfactory, was also reported.

From the employers' point of view, women have proved as satisfactory as men in all the processes they have entered; in fact, one employer went so far as to say women were much more satisfactory; they were not so slack nor so bound by Trade Union rules as to output.

The two greatest obstacles to women entering fully into all the skilled processes are—

(1) Shortness of their industrial career and their lack of adequate training, which often involves a seven years' apprenticeship.

(2) Heaviness of the loads that have to be lifted and the size of the machines which have to be worked.

Other reasons are those of health and also of factory legislation, which prohibits night work for women. This would prevent women being employed in the newspaper trade.

But the immediate reason is that of the Trade Union restrictions—and it is practically impossible for employers to go against these.

The Trade Unions stand very definitely for "equal work, equal pay" in the skilled processes especially. They do not wish semi-trained women to attempt these processes; the result would only be the lowering of the rate of wages.

On the other hand, the Trade Unions strongly advocate more women entering the feeding and other unskilled processes: they prefer women to youths working on these—as it prevents boys entering "blind alley" occupations. Only one Trade Union has a female section—the Paper Workers' Union: and no change has come about in this respect during the war. The employers are

willing, in most cases, to take on women in all the unskilled processes, and several of them expressed their inability to see why women should not do composing (except the lifting of the formes) and also the linotyping and monotyping. Two of them strongly recommended women should enter the artist lithographing and designing department, where there is at present no trade union. It is clean, interesting, and well-paid work.

With regard to the future, both employers and trade unions recommended apprenticeship as the best method of regularising employment, and they considered it should be universal and compulsory. If both men and women went through the same term of apprenticeship, it is probable the Trade Union rules would be relaxed and women allowed to work side by side with men, providing always they received equal pay for equal work.

As to the state of employment immediately after the war, several expressed their belief that the printing trade will be one of the first to recover. It is quite certain women will be retained in all the processes in which they have entered, as the introduction of female labour into these branches had begun before the war, and would have increased in any case. The great problem to be faced will be the adjustment of wages to avoid undercutting the men.

## PRINTING

### (3). NEWCASTLE-ON-TYNE

In two newspaper printing offices, women have replaced men in the dispatch and in the machine room. In both cases, they proved slower workers, and some of the work in the machine room (*e.g.*, carrying the lead plates up narrow ladders to the "plater," who fixes them on the cylinders of the rotary machines) is said to be too heavy for the women. Two or three women are required to replace one man, and the wages paid are correspondingly lower than the men's.

In other printing works (non-Union), one or two women are found as hand compositors, on linotype machines, and on platen machines, at wages considerably lower than those paid to men for the same work. Women have always been employed as "feeders," but since the war their wages have risen in consequence of the competition of munition works.

The Secretary of a printing Trade Union reports that throughout England the introduction of female labour to work formerly done by men has been resisted (successfully) in these branches of the printing trades and in those areas in which the labour is organised. This includes composing (hand and machine), and machine-minding and managing; and the organisations in question are the English Typographical Association, the London Society of Compositors, and the London Society of Printing Machine Managers, each of which has been able to supply the necessary labour without resorting to the employment of women. What little introduction of female labour has occurred has been almost entirely in "unrecognised" houses.

In the badly organised sections, female labour has been freely utilised. This is especially true in the machine and dispatch departments of newspaper printing outside of London.

## BRUSHMAKING

### (LONDON)

The brush trade is localised in the South and East of London. In Southwark, where, beside the large modern factories the old trade persists with small masters who "work on their own," the products are for the most part rough household brushes. In the East, a variety of fancy, bone, and rubber brushes are made in large factories. Attached to nearly all the factories are workshops; there is a considerable body of "home workers."

**FACTORY WORK.—*Processes.*** Most brushes are either drawn brushes or brushes set by pan work: the former (*A*) having the bristles set into the wooden stocks by being drawn through holes and fastened with a loop of wire; while, in the latter (*B*), the bristles are dipped into hot pitch and then set into the ready-bored stock.

For these, certain preliminary processes are identical—

1. The stock must be shaped out of wood by hand or machinery.
2. The bristles are sorted into different lengths and qualities.
3. Holes are drilled into the stock to receive the bristles.
4. (*Class A.*) The bristles are drawn.  
(*Class B.*) The bristles are set in with "pan work."
5. (*Class A.*) The brush is finished, the back being glued on, screwed down, shaped, and polished.

(Class B.) Does not need any back, and the brush needs only rounding off and polishing.

Some of the best brushes are "trepanned." The stock is of one piece; and holes are bored half-way through to meet holes bored lengthwise, along which a thin end of wire is run, and the bristles are connected with a loop and pulled sharply down into place. Paint brushes, artists' brushes, and shaving brushes are quite separate trades.

*Distribution of the Processes between Men and Women.* Women have gradually been encroaching on various departments of the trade (which was formerly a man's trade). At present, the women are to be found chiefly in "drawing." Processes 1 and 2 are, in London, almost entirely confined to men. The introduction of drilling machines into Process 3 has enabled women and girls to take the place of men. Process 4—Class B ("Pan Work")—has, so far, been the most strenuously preserved sphere of men's work; it was said to be too hard, laborious, and demoralising for women. But, even before the war, some firms employed women in this department; and during the war the women are doing "pan work" in at least one new firm, in which the work is not demoralising, and doing as well as men. In Process 5, women are employed in increasing numbers.

*Wages and Hours.* Piece rates are the general rule, but time rates and combinations of time and piece rates are also to be found. The girls are usually taken on for a time as learners at 3s. to 8s. a week, after which they can earn anything from 6s. to 22s. a week. (See Table "A.")

The customary rate for "drawing" is 1d. per 100 knots. Of the 40 firms visited, 6 were paying a "war bonus"; but there were no obvious indications that women's wages had risen generally during the war to correspond to the 15 per cent. secured by the men. Reasons given by the employers for the low rate of wages were that the trade cannot afford more, that women are not worth more, and that for the most part the women are working for pin money.

*Replacement.* The brushmaking trade can be pursued by quite young and by quite old people. Consequently, the drain of the war has not been felt so acutely as in trades where great physical

TABLE "A"

Firm.	Time of Learning.	Wages of Learners.	Hours.	Maximum Wage.	Minimum Wage.	Estimated Average.	Remarks.
1	3 months	5/- a week	—	22/-	8/-	10/- or 11/-	Bonus of 1d. in 1/-.
3			8-6	22/-	8/-	10/-	
5	6 "	5/- "	8.30-7	20/-	6/-	10/-, 12/-	
11	6 weeks	8/- "	8-6	20/-	9/-	10/-, 12/-	
12	6 months	5/- "	8-6	15/-	7/-	9/- or 10/-	10% war bonus.
15			8-6	15/-	7/-	9/-	Time rates.
21			8-6	22/-	10/-	15/-	Tooth-brush. Piece rates
22			8-6	15/-	7/-	8/-	Good conditions.
25	12 "	5/- "	9-7			10/- or 11/-	Tooth-brush. Bad conditions. Piece rates.
27		8/6 "					Rise of 1/- each year.
28				19/-	9/-		(Boring hands paid on system of time and piece—10/- week, piece rates after that is earned.)
38		8/- "	3.30-6.30	20/-	11/-	13/-	Pan work: 32 knots 1d.
39		10/- "	8-6.30	23/-	11/-	12/- to 16/-	New factory.
						13/-	All machinery
						14/-	
		Estimated average		earnings		11/- or 12/-	

energy and endurance are needed. But all factories and workshops visited have suffered to some extent, and, at the same time, work has increased owing to Government contracts for Army brushes. But the obvious solution of introducing more women has not up to the present been accepted. The reasons for this, as given by the employers, are—

- (a) That the introduction of numbers of women would, in nearly every case, have necessitated setting up new premises and plant.
- (b) The trade unions would not easily permit the introduction of women to processes that were previously men's.
- (c) The long training (seven years' apprenticeship) necessary for some of the highly skilled men's processes.
- (d) "Female labour is more trouble than it is worth."

Table "B" shows the extent to which the replacement of men by women has been carried out or is being considered in the firms visited.

*Attitude of Trade Unions.* Of the four brushmaking Unions, only one, the Amalgamated Society of Brushmakers, has admitted women members. They are excluded because it "is not recognised as a women's trade." One official stated that women are

TABLE "B"  
Replacement.

Numbers.				Fam.	Kind of Work.	Numbers.	Process.	Remarks.
Total.	M.	F.						
1	30	20	10	Government Contract for Army.	None taken on			One forewoman drawing large brushes by hand. Generally man's work. Trade Union
6	30	10	20	Government Contract for Army.	Four girls taken on	Boring		Women will be kept on after war. Trade Union
11	130	10	120	Government Contract for Army.	Four girls	Making handles by machinery		Paid same rate as men. Greater output. Non-Trade Union
13	20		?	Artists' Brushes	?	Paint Brushes		On small paint brushes. To be paid same piece rate as men. Non-Trade Union
15	60	20	40	Paint Brush	Three girls	Machines boring		Paid 9/- per week. Will be kept on after war. Trade Union
22	54	4	50	Government Contract Work	One girl	Wet grinding		Lower rates than men. Bad conditions: standing in water. Trade Union
27	30	15	15	Tooth Brushes	One girl	Machines filling		Machine and girl introduced since war. Trade Union
38	20	5	15	Government Contract Work	{ Ten girls Two "	Pan work Painting Brushes		Neater fingered and more satisfactory than men. Non-Trade Union
39	34	4	20	Household				Whole factory an attempt to replace man's labour by women and machinery. Non-Trade Union
23	men and 10 boys			Army Contract				
24	100			Fancy, Tooth, and Household				
<i>Displacement considered.</i>								
Considering building new premises, and employs girls on pan work and machinery boring. Trade Union								
Intending to open new works and putting girls to make wire brushes. Trade Union								

TABLE "C"  
HOME-WORKERS

No.	Piece Rate.	Earnings per hour.	Earnings per week.	Time given.	Age.	Kind of Work.	Training.	Extras.	Husband's Work.	Dependent on Work or not.
1	3/- doz.	3d.	16/-	Most of day	60	Best Goods	Learned from father	3d. doz. bonus	Wood-paver	Partly dependent
2	1/3 "	3d.	3/-	Few hours	50	Common Household	Since a girl	Home	Bass	Not dependent
3	4d. 100k.	4d.	18/- max.	All day	70	Common Scrubs	In a factory	None	Dresser	Not dependent
4	1/- doz.	1d.	12/- to 17/-	All day	70	Common Army	—	—	Bass	Has Old.
5	1d. 100	1d.	1/3 doz.	—	—	—	—	—	Dresser	Age pension, otherwise dependent
11	1d. 100	2 1/4 d.	10/- to 12/-	Most of day	60	Best Army	In a factory	1/- on 12/-	Painter	Partially dependent
13	3/- doz.	1 1/4 d.	8/- to 9/-	All day	40	Common Brushes	Learned as a girl	1d. on 1/-	Widow	Dependent
15	1/- doz.	1/-	8/- to 9/-	Most of day	50	Cloth Brushes	In a factory	Home	Labourer	Partially dependent
23	1/1 "	3d.	13/-	All day	60	Cloth Brushes	In a factory	1/- gross	Casual	Husband often out of work, then dependent
24	1d. 100	2d.	5/- to 7/-	Most of day	65	Scrubs	From her father	—	In asylum	One daughter helps her, otherwise dependent
31	6d. doz.	2d.	—	All day	35	Tooth Brushes	In a factory	Rate gone up 1d. since war	Electrician	Partially dependent
32	6d. doz.	4d. (quick)	7/- to 8/-	Most of day	40	Tooth Brushes	—	—	At work	Partly dependent
44	1/2 doz.	5/-	—	Most of day	70	Hair Brush	Taught herself	1/- gross	Casual	Partly dependent
	3d. 100	—	—	—	—	—	Learned from other out-workers	—	Labourer	—

excluded from "pan work" "because they are not physically fit for it"; but also stated that where women are replacing men, the unions are trying to safeguard their position by insisting that the women shall be dismissed at the end of the war. Employers, on the other hand, say that if the women prove satisfactory, they will be retained after the war. Employers generally complained that plant was lying idle owing to trade union opposition to the introduction of women; and a bone brush firm said that for this reason all its normal trade was going to the Japanese.

**HOME WORKERS.**—The home workers are chiefly engaged in the "drawing" and "cutting" processes. They are, for the most part, women who worked in a brush factory before marriage, and now take in work to supplement their husband's earnings. They are paid by the piece, and the rate is usually fixed per 100 knots or per dozen brushes. One penny per 100 knots was found to be the highest figure, the average being  $\frac{3}{4}$ d. per 100. What this means per hour depends on the rate of the worker: of those visited, the average was  $2\frac{3}{4}$ d. per hour.

The actual weekly earnings depend partly on the quality of work obtained from the firm; but chiefly, of course, on whether the woman works all day or part of a day. Of the 44 home workers visited, 16 worked all day; 21 most of the day; and 7, a few hours: and the average weekly earnings of these three classes were respectively, 10s., 8s., and 4s. 4d.

There has, of course, been no replacement among home workers owing to the war, as it was already women's work before the war. But the women have been extremely busy; their wages have not increased, but some of them are getting a small war bonus.

## TAILORING

(LONDON)

This investigation included the wholesale trade (inquiries made in Whitechapel) and retail trade (West End). The sum of the investigation is that the tailoring trade has not been appreciably affected by the war as regards the displacement of men by women. If there has been any displacement, it has simply been a continuation and development of tendencies that were at work before the war. Women have apparently not been employed on any

novel processes, and the substitution of women plus machinery for men—chiefly in the wholesale trade—occurred long before the war.

Changes in the employment of women as compared with July, 1914, vary from a decrease of 25 per cent. in some firms to an increase of 75 per cent. in others.

The decrease has occurred chiefly in the retail high class trade, where there has been a lessened demand for men's clothing owing to the numbers of men going into khaki, and a lessened demand all round for good clothes owing to war economy. The increase is represented almost entirely by additional cheap labour taken on to work at military and other uniforms for Government and other contracts, though a small percentage of skilled labour is supplementing a shortage of male labour in some of the minor processes on ordinary clothing. But the latter increase is only sectional and practically negligible, the general increase being almost entirely due to the contract work.

No novelty attaches to the employment of women in this trade, hence no changes of organisation or plant have been involved. Some firms have laid down new plant, but entirely to cope with the extra work connected with the large military contracts, not because women were employed.

Women have not to any marked degree been employed on new processes, so that the opinion of employers as to their capacity obviously relates to their efficiency at any time, and the comparison is not based on any striking way in which they have replaced men during the war. The general opinion seems to be that women are as efficient as men in work done by machine or in the minor processes of hand work or in work on light cloths, but not in shaping and finishing processes applied by hand to heavy cloths. This difference was generally ascribed to physical incapacity and lack of natural aptitude, which not even facilities for the same training as men would remove. There was a slight divergence on this point, but this was the general opinion.

The employment of women in the branches in which they were and have been employed before and during the war will probably continue after the war. The general idea seems to be that more women may be employed on the old processes in which they were already employed, but not more on new.

The undercutting of men appears to be safeguarded at both

ends of the trade. In the wholesale trade, wages are fixed by the Trade Board; and in the retail trade, wages are determined by Trade Union regulations.

There is some difference of opinion as to the efficacy of technical training as a preliminary to employment in practical trade. Some employers think that the learners who come to them pick up specialised processes more quickly and are more intelligent if they have got some initial insight into general principles; others prefer to take the learners "raw" and teach them the firm's particular methods from the outset. The suggestion was made that the trade schools are run on too economical lines, and that the quality of the tuition would be improved if first-class teachers could be engaged who could give their whole time to the work.

The difficulty of regularising employment arises chiefly in the retail trade, which is entirely dependent upon individual custom and caprice. People delay too long in ordering their clothes; then order them with a rush. The wholesale trade is better able to regularise employment by dovetailing the full with the slack seasons.

There was considerable reluctance to express a reasoned opinion as to what would happen after the war. No one knows how things may be, and any opinion may be discounted by the subsequent facts. But the general anticipation seems to be that there will be plenty of employment in the tailoring trade after the war, and that there may be something like a boom in clothes. There is not much doubt about the coming demand for labour in this trade, but there is much difference of opinion as to the supply (*i.e.*, in skilled processes). Some think that there will be a shortage of male labour; others that it will be quite adequate. There will be plenty of employment for women in the processes hitherto engaged in. This does not apply to the cheap labour taken on for military contracts, which will be thrown on the market unless it can be re-absorbed to meet an increased demand for cheap lines of clothes. The supply of male labour may be affected by emigration, renewed immigration of foreign tailors, distaste for the trade after experience of military life, and so on.

#### LEATHER

(BIRMINGHAM)

The following information was obtained from six employers and one Trade Union Secretary.

The employment of women in the leather trade has increased by about 30 per cent. since the beginning of the war; this is chiefly, though not entirely, in the military equipment branch, and is due rather to the great increase in the amount of work than to the actual substitution of men by women. There is a certain amount of this latter, but the work is not identical with that done by men, the men's work being sub-divided in order to simplify it. For example, Girthing is divided into three sections for this purpose, formerly, one man would do all three processes. But there is an exception to be made here in the case of Preparing; one firm has put women on to the identical men's work, but has not found them so satisfactory.

The light leather goods branch has also increased: one firm making fancy bags, attaché cases, etc., which is almost entirely the women's side of the business, has had to increase the number of its female employees by 20 per cent. On the men's side there has also been increase—one firm now (July, 1916) employs 404 men against 94 just previous to the war, the corresponding figures for women being 56 and 352 respectively.

The processes which women are now working on, in addition to the usual stitching and machining, are rivetting, preparing, and lighter forms of cutting. In one firm (light leather goods), cutting had been undertaken by women prior to the war; but this was a firm in which even in normal times about 90 per cent. of the employees were women, and the only two processes exclusively done by men were clicking and heavy cutting, which demand great physical strength. The firm stated, however, that even in these processes they would try women in preference to closing down the particular department.

There is no change in manufacturing process with the exception of sectionalising. This has entailed extra foremen, who, where possible, have been taken from other departments of the work.

There appears to be divided opinion as to the efficiency of women. Where substitution is concerned, it seems to be lower. In rivetting and cutting, the inferiority is due to lack of physical strength; but one firm seemed to think that, with good training and practice, these might be done by women to a greater extent than they are at present.

Another firm found women inferior on account of their less idea

of discipline in the workroom; they are not so punctual as men, and often take "days off" without leave, thus upsetting the arrangement and output of the day.

The women are chiefly on day work and their wages, compared with men's, are lower, since the work is simplified.

A large proportion of the extra women have been drawn from the drapery trade (which is slack just now), domestic service, and ammunition work—the latter in the case of women who have felt the strain too great. No leisured women are employed, and very few soldiers' wives.

One firm has undertaken to train girls for 4-6 weeks in some of the heavier processes, in addition to their usual work: 80 per cent. of this firm's work is war contracts.

Most employers seem to regard this sectionalising of the work as only of a temporary nature, to be discontinued after the war, when it is hoped that the men will again take on the work. This will probably mean much unemployment among the women leather workers.

The Trade Union Secretary who gave information said that his Union is quite willing to admit skilled women (and would even encourage them), but not unskilled women. In one district, the Union supports a school for learners. Women members, many of whom are married women (soldiers' wives), and will remain after the war, have been admitted to the Union on the same terms as men. The majority are quite willing to be organised and take their part in Trade Unions.

## TRANSPORT—TRAMWAYS

### GLASGOW

*(Reports have been received from London and Newcastle-on-Tyne. Except where any indication is given to the contrary, the following report is representative of the conditions prevailing in the other centres.)*

Actual number of men	in Service on 11th July, 1914	.	.	6,003
"	women	"	"	132
"	men	"	29th April, 1916	.
"	women	"	"	4,017
"			"	1,455

Women employed on 11th July, 1914	29th April, 1916	Department.	No.
"	"	Clerks	132
"	"	Conductors	1,153
"	"	Drivers	23
		Car-cleaners	125
		Power Station	8
		Clothing	3
		Car Works	1
		Taxi-drivers	6
		Clerks	136

Previous to the war, as the figures show, no women were employed except in the offices as clerks. The change since August, 1914, has been rapid—due in no way to increase of traffic, but entirely to the replacement of men by women. A very large number of the tramwaymen have enlisted: they have done so on the understanding that those who are physically fit will be taken back to their old positions.

**CONDUCTORS AND DRIVERS.**—There are now 1,153 women acting as conductors on the cars (which are “double-deckers”) out of a total of 1,643. The conditions have been somewhat changed to suit the emergency. Previously, all conductors, after serving for about six months, had also to serve as drivers; no one who proved unfit for the work of driver was allowed to remain a conductor. Now women are allowed to remain conductors, no pressure being put on them to attempt the more trying work. On 29th April, 1916, there were only 23 women drivers out of a total of 1,443 but the manager is entirely satisfied with those who have served in this capacity, and states that there is a sufficient supply for his needs. Training for the position of driver takes twelve days, with thirty days “on approval” to follow, provided always that the applicant has served as conductor for six months; while training for the position of conductor takes only eight days.

The working week is the same for women as for men—51 hours (*i.e.*,  $8\frac{1}{2}$  hours per day). The shifts are, as far as possible, of four hours’ duration, the extra half-hour being allowed for reaching one’s destination and making up the cash. One objection expressed by the women used to be that they might wind up a late “run” far from their homes, with a lonely walk before them; but an effort is now made, for men as for women, to finish duty on routes landing them within reach of their homes in reasonable time.

(The only other objection of any account is that women are often exposed to impertinence from uncivil passengers; but the complaint is not general.)

Before the war, men conductors were paid 27s. per week, while drivers were paid 29s., rising in seven years to a maximum of 37s. During the war there is a bonus for the men of 2s. per week. Women conductors receive 27s. for the first six months<sup>1</sup> and 28s. thereafter; women drivers, 28s. for the first six months and 29s. thereafter. That is the maximum granted up till now. Both men and women drivers receive 26s. for every period of twenty-six weeks in which they have driven without "culpable accident."

The manager expresses himself as satisfied with the women's work. Far fewer have given up than was expected. Up to 17th September, 1915, when there were 787 in actual service, 15 had been dismissed and 55 had resigned. Large numbers are waiting for vacant openings.

Generally speaking, the women employed do not lose much working time; they are more often off than were the class of men employed before the war, but not more so than the class employed since. Married women are more to blame in this respect than single, as they usually have some other income and can afford a day off now and again.

CAR CLEANERS.—On 29th April, 1916, there were 125 women engaged in cleaning the cars, out of a total of 524. The manager expects that before long there will be few men employed in this capacity; those at present employed have been asked to leave the service for "more important national work," though it is understood that this is only for the period of the war. The car cleaners have a working week of 51 hours—from 10.30 p.m. to 8 a.m., with an hour's rest between 3 a.m. and 4 a.m. As far as possible, one night in the week is given off; but every fourth week the cleaner gets from Saturday morning till Monday night. The wage is 27s. per week.

The wage is large, but many do not like the night work and many do not stand it, so that as many have given up as have stayed on. Probably those who have families do not take sufficient sleep during the day.

A record has been kept of the previous occupations of women conductors up to 17th September, 1915, when there were 787 in

<sup>1</sup> In London, generally, the rate of pay is the same as that of men on the same work; and, in most cases, the hours worked are the same.

actual service: 281 were wives, almost all wives of men serving at the Front—hardly any civilians' wives have been accepted; 115 had been domestic servants of the better paid class; 59 had been shop assistants; 55 were widows; 48 had had no occupation previously; 30 had been clerks; 21, weavers; 21, mill workers; 20, waitresses; 20, cooks; 20, machinists; and so on.

There seems no doubt that women will be retained after the war for car cleaning; but it is open to question whether the proportion of those engaged in conducting will be large, if the old rule is re-established that the conductor must become proficient in driving as well. Time will show whether a fair number of the present women conductors are willing to undertake a duty that requires reliance and steady nerve: it is too soon to assert that it is only the exceptional woman who can drive. Conductors have sometimes to face overcrowded cars and unruly passengers, and get through to the satisfaction of the manager and the general public.

(In Newcastle, 280 car conductors and 12 car cleaners are employed to replace men. Of these, 55 are married, and their husbands are on active service. The women are satisfactory, though not as efficient as men.)

#### SCOTTISH RAILWAYS

Company.	Number of Women employed before War.	Number employed since August, 1914.	Total Number now employed: 30th Oct., 1915.
A	733	451	1,184
B	393	265	658
C	120	30	150
D	41	27	68
E	473	205	678
Total	<u>1,760</u>	<u>978</u>	<u>2,738</u>

From statistics supplied by Companies A and B, it is clear that the numbers have largely increased since 30th October, 1915, and it may be accepted that the employment of women has advanced by 100 per cent. from what it was before the war.

The following figures may be given as making clear the general position in the railways—

COMPANY "A"

Department.	Women employed previous to War.	Number employed since outbreak.	Total Number employed on 8th May, 1916.
Accountants	14	7	21
Audit	23	4	27
Canal	4	5	9
Coaching	175	346	521
Joint Line	7	—	7
Engineering	4	4	8
Factors	4	—	4
Goods	47	103	150
Head Office Charwomen	67	—	67
Hotels and Refreshment Rooms.	246	58	304
Laundry	56	7	63
Locomotive	7	25	32
Solicitors	4	1	5
Stores	18	29	47
Telegraph	57	50	107
Total	733	639	1,372

"Coaching" is the only department that relates definitely to transport: it comprises ticket-collectors, booking-clerks, carriage-cleaners, and porters. Of these, carriage-cleaners and booking-clerks are the only grades not included in the agreement come to on 16th August, 1915, between the Companies and the National Union of Railwaymen: there were women carriage-cleaners before the war, and there were a few booking-clerks. Other grades are paid at the minimum rate paid to men: in one Company the carriage-cleaners are all paid at the old rate—12s. for a working week of 54 hours, with a war bonus of 3s.; while in another they are now paid the minimum men's rate. The same applies to booking-clerks in the same Companies.

But ticket-collectors and porters are paid all over at the minimum rate of the men's grade, the former receiving in a representative Company, 21s. per week, with a war bonus of 4s.

In the "A" Company there are now 54 women serving as ticket-collectors; in the "B" Company, 57. They work the same hours as men, and have early and late duty.

In Company "A" there are now 140 men serving as booking-clerks; in "B" there are 52: their work and hours are the same as the men's, except that in "A," circumstances at certain stations allow of women being given shorter hours than were worked by men.

In Company "A" there are now 93 women porters; in "B" there are 58. These are said to be largely drawn from the class of women accustomed to heavy work, such as farm servants and fish-girls; while the ticket-collectors and booking-clerks are drawn from warehouses and shops. There is a large demand for work in connection with these two railway companies that have their headquarters in Glasgow.

In Company "A" there were 58 women carriage-cleaners before the war: now there are 191. They work from 10 to 11 hours per day, with two hours off for meals; the working week is six days. At one station there are day and night shifts; elsewhere there are day shifts alone. The quality of work done is stated to be as good as the men's, but the quantity is not the same, especially that in the inside of the carriages.

In Company "B" there were 31 women carriage-cleaners before the war, while there are now 115 (31st May, 1916). They work 10 hours, less two meal hours, taking early and late duty alternately. At present, they have no night duty. The quality of their work is said to be an improvement on the men's, but the quantity is a little less. Twenty-four are now cleaning the outside of locomotives "to the satisfaction of the Company."

Opinions differ as to the work of women on the railways. One authority of wide experience expressed his conviction that three women are needed for every two men employed in a work like carriage-cleaning—not that three women would take the same time as two men, but two women would not suffice, and a third would need to be employed. The same authority also held to it that women could not, for physical reasons, work the same hours as do men in strenuous employment; and would prefer, as experience had taught him, shorter hours and less pay. But others again stated their conviction that what women lacked in quantity of work, they made up in quality; and expressed their surprise at the amount of work women could get through, if they had sufficient wages to feed and clothe themselves properly.

As in the case of the Tramways, time is needed to show whether

women can undertake the same hours and duties as men as carriage-cleaners, ticket-collectors, and booking-clerks; or whether changes must be made to allow of their partial employment. It is hardly likely that they will wish to continue as porters: the work is too heavy even for the few.

Women were admitted to the Railwaymen's Union two years ago, and "quite a few" have joined.

### CLERICAL WORK

(*Report on employment of women as clerks in: Banks, Solicitors' Offices, Shipping Offices, Gas Company, Engineering Firms, Accountants' Offices, and Co-operative Stores.*)

In these businesses there were women employed before the war as typists and as telephone girls, but in most cases their employment as general clerks seems to be a new departure.

There is, however, no case of a very striking increase in female labour, because of certain limitations in individual employments, and because of a considerable decrease in business in solicitors' offices and kindred establishments. A few examples of figures may be given—

In one bank having several branches, where a few typists only were employed before the war, there are now 90 women clerks, whereas the number of men has fallen from 166 to 80. In another bank where formerly there were no women, the women now number two-thirds of the staff.

In the offices of a large colliery owner, where the employment of women was limited to telephone work, there is now a staff of about 8 lady typists and 6 lady clerks.

A firm of solicitors has increased its female staff from 5 to 8, while the male staff has been reduced from 32 to 25.

The most striking figure received is from a large engineering firm, in which the number of girl-clerks has risen during the war from 140 to 330, still more being needed. The exact significance of these figures cannot be estimated, as no numbers are given for male clerks; but it is probable that there has been an increase in business to account for part of the number of girls employed.

A Gas Company gives the following table of staff employed for general clerical work—

MALE.		FEMALE.	
		<i>Married.</i>	<i>Single.</i>
Before War.	1916.	Before War.	1916.
121	74	—	4
			Before War. 1916.
			6 41

In general, the employment of girls and women is due entirely to the necessity for replacing men. The exceptions to this generalisation are found in shipping offices and in co-operative stores, where the increase of business has meant a real increase in staff. The same may also be true of engineering firms. In the colliery office referred to, the employment of girls has necessitated provision of suitable accommodation, which seems to have been the sole hindrance to an even earlier adoption of women for clerical work. In some cases, as, for example, in solicitors' offices and in the Gas Company referred to above, the decrease in the number of men is greater than the corresponding increase of women, the former being a business adversely affected by the war; while, in the latter, war conditions have reduced the clerical work in certain directions.

This class of work seems to have been taken up largely by girls who have received a high school education, and would, normally, have taken professional posts.<sup>1</sup> This is particularly true in the case of banks where many of the women are actuated by patriotic motives; the colliery staff is also recruited largely from this class. The banks also employ a number of soldiers' wives. The report of the engineering firm says: "Most of those taken on since the commencement of the war are either girls straight from school (grade not mentioned) or are girls with some experience of office work, though some have been dressmakers and drapers' assistants before, and a few have been living at home."

The employment of women is, almost everywhere, only in the more mechanical sides of the clerical work—typing, shorthand writing, copying, and filing. In some cases, such as shipping business and accountancy, the higher grades of work are very technical, and need special training and experience, which the women do not possess and do not think it worth while to acquire. Elsewhere, certain sides of the work are considered suitable only

<sup>1</sup> In Glasgow it is reported that the majority of the new female clerks have been drawn from other trades and occupations.

for men, the chief example being the serving of writs and the arrangement of evidence in case of immoral proceedings, which forms part of the work of a solicitor. This is interesting when taken in conjunction with the general opinion among solicitors (recorded later) that the employment of women is highly desirable and likely to be permanent.

Most of the firms estimated the worth of a girl-clerk as less than that of a male clerk. The largest of the banks visited considered that a woman clerk did from two-thirds to three-quarters of the work of a man. But there is a general opinion that women are more conscientious and painstaking than men, though the latter are probably more accurate on the whole. In all routine work (such as typing and copying), women prove better workers than men. Lack of initiative and resourcefulness was also emphasised in several cases. Lack of staying-power constitutes a barrier to women's employment, in the opinion of most. Women, for example, can seldom stand overtime. Underlying these defects is the fact that the woman does not take such an impersonal interest in business as a man does. Opposed to this view was that of the manager of a large shipping firm, who considered that in quickness and initiative there was nothing to choose between men and women. The girl, as a rule, did a more thorough and better day's work, and overtime if necessary. Since the war, they have been working with the men till 8.30 p.m. and Sundays when necessary, but the exact amount of overtime and the number of Sundays worked was not stated.

Continual work with figures and a sense of responsibility was found in some cases, particularly in banks, to make for nervous strain, and absence through illness is more frequent than among the men. As regards hours, the periods worked are generally the same as those worked by men. In a few cases, hours are slightly shorter for women, and, as mentioned above, overtime is generally regarded as impossible.

In banks, colliery offices, and shipping offices, girls are getting higher wages than youths of about 17 years doing the same work. This is because the latter are paid on an apprenticeship basis. For example, the colliery office pays girls of 17, £40 to £50 per annum to commence; whereas the boys receive a four years' training and are paid successively £13, £16, £20, and £30 per annum.

In shipping offices, girls of 19, without experience, get 20s. weekly; with experience, 27s. 6d. to 32s. 6d., plus war bonus; while youths enter on an apprenticeship of four to five years and start at 4s. weekly, increasing by 2s. each year. A large engineering firm has an apprenticeship system for girls as well as for boys, with a definite scale of wages as follows—

## WAGE.

Starting at the age of	1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.	6th yr.	7th yr.
15	6/-	10/-	15/-	20/-	22/6	25/-	
16	7/6	15/-	21/-	22/6	25/-	27/6	
17	10/-	15/-	20/-	22/6	25/-		
18	12/6	17/6	20/-	22/6	Rising to	27/6	
19	15/-	20/-	22/6		"	"	
20	17/6	20/-			"	"	
21	20/-				"	"	

In most businesses there has been a substantial increase in wages, due to general changes in conditions. Solicitors, for instance, pay 20s. to beginners who formerly received 12s. 6d. to 15s.; while one firm which paid its women clerks 20s. to 22s. 6d. before the war, now gives them 25s. to start, experienced women getting 30s. to 35s. In engineering, girls are getting, roughly, double what they earned before the war.<sup>1</sup>

Some Glasgow firms report that greater advantage could be taken of female labour in clerical work if some uniform system of compulsory training were instituted. Commercial colleges and evening classes exist in abundance: but the fees of the former and the day hours make it impossible for many to attend; and, in the case of the latter, the student is too fatigued after the day's work to take full advantage of the courses. The raising of the school leaving age to 16, and definite commercial training to children who contemplate becoming clerks, are suggested.

As to the possibilities of continued employment of women after the war, the general opinion seems to be that it will be only in the lower grades of work, and that, in general, the numbers retained will be small. A considerable number of those who have taken up clerical work from patriotic motives will probably withdraw: soldiers' wives will, to some extent, resume domestic duties, while

<sup>1</sup> Glasgow. The National Union of Clerks has fixed the Glasgow minimum at 35s. for male and female alike.

widows will probably remain. A general lack of ambition, due to hopes of marriage, keeps girls from learning the technicalities of a business, but makes them more valuable as routine workers and in *cul-de-sac* positions. Among solicitors in Newcastle there exists a great body of opinion that not only will woman labour continue, but it will increase.

### LAUNDRIES

In the laundries visited in Newcastle, there has been little replacement of men by women, except in a few cases in the wash-houses. On the whole, all work for which women are capable was done by them before. The change has rather been from women to young girls, and from skilled workers to unskilled. In the largest laundry visited, 160 women are employed and 25 men (engineers, firemen, wash-house men, and van-drivers). One woman is assisting in the place of a man in the clearing department, and two women have replaced a man in the wash-house. Where substitution has taken place in the wash-house, it has almost always been in the proportion of two to one, because of (a) the heavy nature of the work (specially with military contracts); (b) the unreliability of many of the women, so that two must be engaged to make sure of the presence of one.

The working conditions of laundries have been seriously dis-organised by the efflux of women to munition factories and to clerical work. These women were skilled, especially as packers and sorters; and the latter, according to one firm, take years to become really efficient. There is a difficulty also in respect of "fine ironers." As far as possible, girls are promoted to this work from the lower grades. Considerable difficulty and friction are also caused by workers obtaining the minimum of training in one laundry, and then coming and representing themselves as skilled workers.

The vacancies are filled (a) through the Juvenile Labour Bureau; (b) through the Female Labour Bureau (which gives no references); (c) by women who offer themselves. These last are very unsatisfactory. On the whole, the type of woman is much lower than formerly, and managers prefer to take on young girls to train.

There has been a general rise in wages, because of the shortage in workers and the desire of the managers to retain a certain

number of skilled women. The rise has not, however, been very great, averaging from 1s. to 2s. 6d. a week.

The hours worked are generally 10 or 12 per day.

### DISTRIBUTIVE TRADES

Inquiries into the distributive trades were made in Glasgow and Newcastle. In Glasgow, representative firms in drapery and grocery were investigated, and the following tables show the changes in numbers of employees, since the outbreak of war, in the firms visited.

Of the ten firms investigated, eight show an increase, and one a decrease in the number of female employees.

Where an increase has occurred it was, in all cases, except one, almost entirely due to the replacement of men. In the exceptional case, it was attributed to increased trade. In the drapery firm, in which no figures were available, there were certain replacements in packing, dress materials and linens departments, and on elevators.

The changes in organisation necessitated by the introduction of women have been few and slight. In certain wholesale drapery warehouses, there have been re-divisions of work—the still remaining men were being gradually transferred from “light” departments, such as neck-wear to “heavy” departments for which women are unsuited, and women are taking up the “light” work.

There is no note of any reorganisation in the grocery establishments dealt with.

**COMPARISON OF WOMEN'S WORK WITH MEN'S.—*Drapery*.** In two large wholesale drapery establishments, women are said to be quite as satisfactory as men, and both firms would gladly retain their services after the war if positions can be found for them. In these firms, the replacement has been in the ratio of one woman to one man, though it cannot be said that in every case the woman is doing the man's work. Some re-arrangement and sub-divisions have been made.

In two retail drapery firms, the opinion was expressed that women were not so satisfactory in the dress materials and linen departments, the reason being that they have not sufficient knowledge of fabrics to prove efficient saleswomen. Stress was laid

TABLE A—GROCERS

MALES.						FEMALES.					
Firm No.	Employed before War.	On Service.	Employed Now.	Replace-ments.	Decrease or Increase.	Firm No.	Employed before War.	Employed Now.	Taking Place of Men.	Decrease or Increase.	
1	64	31	43	11	- 21	26	17	17		+	17
2	279	62	234	14	- 45	89	49	53		+	53
3	195	171	87	63	- 108	63	111	111		+	111
4	131	22	152	-	+ 21	3	8	8		+	5

TABLE B—DRAPERS

1	107	35	79	—	—	—	28	—	170	186	13	—	16	—	
2	42	No figures available.	30	—	—	—	12	80	78	No figures available.	—	—	2	—	
3	571	12	377	—	—	—	194	72	180	—	—	108	—	108	
4	5	164	—	—	—	—	—	—	128	269	—	141	—	141	
5	360	97	297	No figures available for Men.	34	—	63	54	54	81	—	27	—	27	

by both firms on the alleged preference shown by women customers for the services of men in the departments. The tendency here would be to restore men to these departments.

One of the firms also expressed some dissatisfaction with the work of women cleaners and packers, giving as reason the inability of women to clean high places and to lift heavy weights. Here, again, men will have preference when available.

Another retail establishment, while appreciating the work of women on the whole, was inclined to the opinion that, because women regard their work as a temporary thing, they would always be less efficient than men.

*Grocery.* The employer in one of the retail grocery firms visited finds that, on the whole, his women employees come from better homes than the men. In the grocery and dispatch departments, he does not think they are as yet quite as satisfactory as men, and in the druggist department, also, they are not yet quite so efficient. The employer accounts for their inefficiency in the latter department by the fact that most of them have been trained in doctors' shops. This type of training, even among men, is not considered good; and with proper training, women, he thinks, would be equal to men in this department. The ratio of replacement here is one to one, and the employer states that the services of women will undoubtedly be retained after the war.

In another retail firm, the inexperienced women, who are said to be drawn mainly from among mill workers, are not yet so satisfactory as men, but they learn quickly, and it is expected will continue to be employed. Frequent short absences are one drawback mentioned by this employer.

In a fourth large retail establishment, women, while not at present considered as satisfactory as men, will probably continue to be employed after the war. They have, so far, been placed only in selling and packing departments. Employers suggest that there is a certain want of application among women employees, and for this reason probably, women have difficulty in remembering prices. In this firm, 49 women are replacing 31 men.

The female labour has been drawn from girls occupied in smaller shops (hardware and confectionery), from mill workers, dressmakers, and girls living at home. A few only are married.

WAGES AND THE QUESTION OF UNDERCUTTING.—In the drapery

trade, there does not appear to be very great probability of women undercutting men. That trade has for a considerable time been regarded as more or less a woman's trade. Men are employed in certain departments, but these are clearly defined; and the information obtained points to the likelihood that their services will be retained. It was impossible to obtain details of wages paid in the drapery trade.

It appears probable, on the other hand, that there will be keen competition between men and women in the Grocery trade after the war. A considerable number of women at present employed have been drawn from smaller shops and from mills where remuneration was less. These women will wish to remain. As regards men, it may be assumed that a considerable number formerly employed in this trade will wish reinstatement. A Trade Union official informs us that the general feeling is that women will not be employed in responsible positions to any extent after the war, but a substantial proportion of those at present engaged will remain as counter hands. Here, again, it was impossible to obtain detailed information regarding wages. An examination of the Minimum Wage Rates issued by the National Amalgamated Union of Shop Assistants, Warehousemen, and Clerks shows that, while wages for boys and men range from 8s. at 15 to 34s. at 24, those of girls and women for same ages range from 7s. to 21s. The minimum wage laid down for branch managers is 38s., while that for branch manageresses is 24s. This scale has been adopted by two of the firms interviewed. There is considerable demand from the Trade Unions for equal pay for equal work.

Most of the employers interviewed were of opinion that an improved system of education in commercial arithmetic is desirable. Beyond this, no suggestions regarding industrial and general training were offered. The Royal Technical College of Glasgow provides a special textile course extending over two years to meet the requirements of buyers, salesmen, drapers' assistants, and others engaged in the distribution of textile fabrics. Attendance in these classes has, so far, been limited to men. This is probably due, to a certain extent at least, to the fact that employers appear to prefer men assistants for the sale of textiles. Under the new situation which has arisen during the war, it appears possible that women may qualify for this work.

The attitude of Trade Union members may be noted. Male members are desirous that women should organise as well as men. Women employees are stated to be less enthusiastic than men regarding organisation; but, since the war commenced, the National Amalgamated Union of Shop Assistants, Warehousemen, and Clerks has made a special appeal to women employees with considerable success. Membership numbers for April, 1914, and corresponding period in 1916, are as follows—

	1914.	1916.
Men . . . . .	3,034	3,024
Women . . . . .	1,042	1,492

Summing up, as far as possible, such varying statements, the impression received is: *First*, that so far as the less "skilled" departments are concerned, while lack of physical strength does, to some extent, militate against the successful employment of women, where there is no undue tax on strength, women's work is as satisfactory as that of men, and will in all probability continue.

*Second*, that, in the case of the "skilled" posts, such as managers and travellers, and of salespeople in dress fabrics and linen departments, there will be a tendency to give men the preference. This is for two reasons—

(a) The greater willingness of men to devote some study to the technique of the work (as in the case of dress fabrics and linen, by taking suitable classes).

(b) The greater chance of retaining a man's services permanently.

It may be suggested that possibly the lack of prospects of promotion is, to some extent, the cause of the alleged unwillingness of women to give more interest and study to their work.

## "PUBLIC SERVICES" <sup>1</sup>

### 1. EDUCATION

TEACHING STAFF.—(*Elementary.*) There has been no appreciable increase in the number of women employed as teachers—

		Men.	Women.
Before the War	Head Teachers . . . . .	38%	62%
	Class " " " " " . . . . .	22%	78%
Present time	Head Teachers . . . . .	38%	62%
	Class " " " " " . . . . .	16%	84%

<sup>1</sup> The reports under this heading show the conditions in one city only in each case.

At the time of reporting (July, 1916), "no new teachers had been engaged: but a point had been reached at which new appointments were necessary."

Before the war, accommodation was very inadequate and is now, of course, much worse. The difficulties have been partially met (a) by renting other buildings; (b) by putting some of the children on half-time and employing all teachers full time, and by asking some teachers to take one set of children in the morning and another set in the afternoon; (c) by moving teachers from one school to another, so as to make the best arrangement possible from time to time.

TEACHING STAFF.—(*Secondary.*) Only 11 women were found to be employed owing to the war; 4 of these are working half-time in a boys' school and still teaching in a girls' school; 1 is working in a training college for women four hours a week and also doing full time in a boys' school. In the largest school (582 boys), an arrangement is made with a girls' school under the same management, by which some of the women on the staff of the latter give 35 to 40 hours weekly at the boys' school.

With regard to the future, as shortage of good assistant masters is to be expected, and the present new openings are drawing women away from the profession of teaching, the salaries of both men and women will, therefore, probably rise, and women will be more extensively employed in boys' schools as teachers of the lower forms and as teachers of special subjects.

The salaries paid just now to secondary teachers are equal or almost equal for men and women.

## 2. HEAD POST OFFICE

	Normal Complement.		War Complement.	
	Men.	Women.	Men.	Women.
Engineering Dept. (Clerical force)	90	3	31	31 (a)
Telephone Office (Administration Office)	24	47	12	57
Sorting Clerks	256	—	122	100 (b)
Postmen	430	—	192	
" temporary	—	—	103	80 (c)
Telegraphists	146	110	70	150 (d)
" learners	12	9	25	10

(a) 5 wives of mobilised men.

(b) 4 "

(c) 12 married, 4 widows of " soldiers.

(d) 30 married. All old telegraphists who will undoubtedly return to their homes.

<sup>1</sup> Particulars of telephone operators (exclusively female) not shown.

The additional employment of women is mainly due to the replacement of men. The business is slightly less.

Women have proved as satisfactory as men in the routine work of the Engineering Department, but do not seem to have taken so well to the night work of sorting. On delivery, the women "have done splendidly" on lighter rounds, but they are not good for heavy work, and even the light work would tell on them in the long run. Telegraphist-women are nearly as good as men. Women, however, are not paid the same as the men, who can stand a strain longer, and can work any time. The maximum of an expert male telegraphist in this city is 58s. per week; that of a woman, 36s.

### 3. CITY ENGINEER'S OFFICE

Before the commencement of the war, women were employed by this department only in women's lavatories.

Total Men, July, 1914.	Joined Forces.	Transferred to Munitions.	Women engaged.
1,150	236	120	123

This employment of women is entirely to replace men; and, as will be seen, the reduction in work has made it unnecessary to replace the whole 356 men.

Of the 123 women: 100 are employed in street cleaning; 20 in public parks; and 3 in sorting waste paper.

As a general rule, women have not proved to be so satisfactory as men on the particular kind of work for which they are engaged by this department, and it is probable that they will not be so employed after the war.

#### WOMEN EMPLOYEES—CITY ENGINEER'S DEPT.

Soldiers' Wives	.	.	.	.	.	70
Sailors' "	.	.	.	.	.	4
Widows .	.	.	.	.	.	32
Single, supporting parents or other dependents .	.	.	.	.	.	6
Separated from husbands .	.	.	.	.	.	3
Supporting delicate husbands .	.	.	.	.	.	8
						123

## CHAPTER IV

### THE EFFECT OF THE WAR ON CREDIT, CURRENCY, AND FINANCE

#### *Research Committee*

PROFESSOR W. R. Scott, F.B.A. (*Chairman*), Mr. J. E. Allen (*Secretary*), Sir Edward Brabrook, C.B., Professor C. F. Bastable, Professor L. R. Dicksee, Professor Edgeworth, F.B.A., Mr. Barnard Ellinger, Mr. A. H. Gibson, Professor E. C. K. Gonner, Mr. Francis W. Hirst, Professor A. W. Kirkaldy, Mr. D. M. Mason, M.P., Professor J. Shield Nicholson, F.B.A., Sir R. H. Inglis Palgrave, F.R.S., and Mr. E. Sykes.

#### I.—INTRODUCTION

THE following is a continuation of the interim report which was presented at the meeting of the Association at Manchester in 1915. It was decided by the Committee that a comparative treatment of some of the subjects under investigation was likely to be advantageous, and communications upon a number of topics were invited from economists in Canada and in certain foreign countries. The Committee desires to record its most cordial thanks to the following correspondents who contributed highly valuable and interesting data—

Professor Luigi Einaudi (Turin)	Professor Camillo Supino (Milan)
Professor Charles Gide (Paris)	Mr. Sigmund Metz (Buenos Ayres)
Professor Achille Loria (Turin)	

In addition important communications were received from experts in the United Kingdom—

Sir Edward Brabrook	Mr. J. Kitchin
Mr. Barnard Ellinger	Mr. D. M. Mason
Lord Farrer	Sir G. Paish
Mr. E. L. Franklin	Sir R. H. Inglis Palgrave
Mr. D. Drummond Fraser	Sir Felix Schuster
Mr. A. H. Gibson	Professor W. R. Scott
Miss M. E. Hirst	Mr. W. F. Spalding
Mr. F. W. Hirst	Mr. E. Sykes
Professor A. W. Kirkaldy	

#### II.—CREDIT

Our report of last year (which was written during June and July, 1915), was concerned largely in the sections upon Credit, with the period of transition from a state of peace to one of war. Thus to a considerable extent it constituted a record of emergency measures,

with some attempt to estimate the principles involved in them. During the interval of about a year which has since elapsed—from July, 1915, to June, 1916—there has been a considerable recall of various emergency measures, as for instance, the gradual withdrawal of minimum prices for Stock Exchange securities. On the other hand, in certain directions there have been further emergency measures such as the Act for the restriction of increase of rent of small dwelling-houses and also the restriction of increase of interest upon mortgages of such houses (5 & 6 George 5, ch. 97). Then the calling up of married men for the Army has resulted in measures to relieve them, to a certain extent, of their contractual obligations.

On the whole, the changes in the situation as affecting Credit between the summer of 1915 and that of the present year show that credit has now, in the main, adapted itself to a state of war, and that the alterations which have manifested themselves in that time have been such as were considered to be necessary to meet the needs of the military situation as it developed. Accordingly, while our previous report dealt mainly with an era of transition, it is possible in this one to examine and to record provisionally some of the more prominent characteristics of British credit as adapted to a state of war. The marked increase in banking deposits is a phenomenon which is apparently anomalous. To the casual observer it might appear that the general uncertainty of a state of war, the pressure of taxation and the expenditure of the Government in foreign countries would tend to deplete deposits in banks. Observation of the facts shows that, on the contrary, deposits have increased greatly during the war. The increase for the period 1st January, 1914, to 31st December, 1915, was a little over £200,000,000 (see *Economist*, 20th May, 1916, pp. 906-7), or at the rate of £100,000,000 per annum, as against a normal increase of £30,000,000 per annum, taking the average of the ten years, 1904-13 (Table I, p. 225). Thus a large actual increase in deposits is shown, and it is desirable that the causes of this movement should be examined and explained.

As regards the joint stock banks, the following are the chief causes which would be likely to have an effect upon the amount of the deposits: the calling in of floating foreign balances from abroad; decrease in the amount of outstanding London acceptances; contraction of outstanding trade debts in the United Kingdom;

subscriptions by the general public to war loans, Exchequer bonds, Treasury bills or other securities; subscriptions by banks to war loans, Treasury bills and Exchequer bonds; loans to British Colonies, Allies and neutrals; issues of foreign loans and foreign Treasury bills on the London money market; changes in the amount of floating foreign balances in London; the selling of foreign investments to foreign countries; the raising of loans in foreign countries; the issue of currency notes; and the increase of bankers' loans on security.

It will be seen that not only are the possible causes many, but it so happens that most of them operate in varied forms according to the presence or absence of various accompanying conditions. Some of these conditions are sufficiently general to reappear in a number of cases, and their influence may conveniently be discussed before proceeding to the examination of details. Mr. Hartley Withers in 1909 aggregated the balance sheets of six of the largest joint stock banks in the following form—

<i>Liabilities [Credits]</i>		<i>Assets [Debits]</i>
	Millions of £'s	
Due to shareholders . . .	28½	Cash in hand and at Bank
, , , customers . . .	249	of England . . . . .
	<hr/>	43
	277½	Investments . . . . .
		48
		Premises . . . . .
		6
		Due from customers . . . . .
		180½
		<hr/>
		277½
		<hr/>

But, as Mr. Withers points out, "the greater part of the banks' deposits consists, not of cash paid in, but of credits borrowed."<sup>1</sup> It is important to note that the word "Deposits," as generally used in a discussion of liabilities of banks, includes amounts due to customers on current accounts as well as on deposit accounts, and also sundry inside accounts, for British banks do not separate such items on their published balance sheets. A more suitable expression than the word deposits to represent bank liabilities, and the one used in the following pages, is "Credit Balances," or "Total or Aggregate Credit Balances," because bank liabilities to customers, whether on deposit or on current accounts, represent

<sup>1</sup> *The Meaning of Money*, p. 63.

credit balances at the command of customers. When considering the variation in banking deposits, it is necessary to bear in mind the difference between the London and the provincial methods of recording loans of credit. The provincial method is to allow a customer to overdraw his account up to the agreed limit, and the account is debited, from time to time, only with the amount of credit actually used and transferred to other persons. In London, however, it is usual for the customer to arrange for a loan of a given amount to be credited to his account forthwith, or to arrange a loan limit and instruct the bank, from time to time, to place specified amounts to his credit under the limit. Upon the provincial bank method of recording loans of credit, and considering the banks as a whole, if a bank agrees to grant credit, say to the extent of £10,000 to A, who eventually transfers it to other customers of the same or other banks, the effect on total credit balances and loans will vary according to the relation to the bank of the recipients of A's cheques. If, for instance, A gives a cheque for £10,000 to Z, who already has £3,000 standing to his credit, the total credit balances and loans of the banks, as far as this transaction is concerned, will each be increased by £10,000. If the cheque for £10,000 be paid to Y, who owes his bank, say, £15,000, then the net effect will be no change in the total credit balances or in loans. Again, if A divided his loan equally between Y and Z, the total credit balances and loans will each be increased by £5,000. Further, suppose A pays his loan in equal portions to V and W, each of whom is indebted to his bank for amounts of at least £5,000, then there will be no addition to the total credit balances nor to loans. This reaction of the destination of bank credits is a phenomenon which occurs frequently in the discussion of causes which follows, and its operation must be allowed for in any attempt at an estimation of their total and composite effects.

We are now in a position to examine the effects of the causes more in detail.

(i) **THE CALLING IN OF FLOATING FOREIGN BALANCES FROM ABROAD.**—The effect on credit balances will vary according as the foreign balances were at the call of banks or other institutions and individuals, and also according to the form in which remittance took place.

(a) *When Called In by Banks.*—If the remittance was in gold, it will have no effect upon credit balances. The item of "Money at call and short notice" in the bank's balance sheet, would be diminished, while that of "Cash in hand and at the Bank of England" would be increased by the amount remitted. On the other hand, if the remittance is made indirectly in the form of goods, credit balances would tend to diminish as the community pays for the goods; while advances would increase, if the goods were partly consumed by the community on a further extension of credit.

(b) *When Called In by other Institutions or by Individuals.*—If the remittance was in gold, and is paid into the banks, credit balances will increase, unless to the extent such payment was made to accounts where there was a debtor balance as large as the remittance. Indirect remittance in the form of goods which are sold to the community will tend to create credits and debits in the books of banks of the United Kingdom, which in the aggregate will cancel each other. To the extent, however, that purchasers of the goods pay for them by means of loans from their banks, both credit balances and advances will increase.

(ii) DECREASE IN THE AMOUNT OF OUTSTANDING LONDON ACCEPTANCES.—A decrease in the amount of bills drawn from abroad and discounted by banks or other institutions in the United Kingdom will have an effect on credit balances generally similar to that already indicated above in the calling in of floating balances from abroad. When, however, the bills accepted by London banks and financial houses were held abroad, a reduction in the amount of them will have diverse effects upon credit balances in the United Kingdom according to the character of the transactions.

(a) When bills were accepted for goods supplied to the United Kingdom, gold may have been exported from the United Kingdom in payment of some of the indebtedness at maturity. In that case aggregate credit balances in the United Kingdom will have tended to diminish *pro tanto*. (b) If, however, goods were exported in order to make final payment, credit and debit entries will have been made in the books of the banks of the United Kingdom which generally tend to cancel each other. (c) Where the London acceptances arose in the process of financing trade between foreign countries and were held or discounted abroad, a reduction in the amount of these will have no ultimate effect on the aggregate

credit balances in this country, except where default occurs at the maturity of the bills. The circumstances in the latter case involve the same general considerations as occur in the issue of loans by us to colonies and foreign countries, and may be more conveniently considered under these heads. (See below (vi) and (vii).)

(iii) **CONTRACTION OF OUTSTANDING TRADE DEBTS WITHIN THE UNITED KINGDOM.**—It is probable that the contraction of internal trade debts since the beginning of the war has not exercised a material effect upon the aggregate of bank credit balances. According to the method of accountancy amongst provincial banks, if both debtor and creditor had credit balances there would be no change in the aggregate of credit balances. Likewise, if both had debit balances, there would be no change. If, on the other hand, the debtor had a credit balance and the creditor a debit balance, the consequence of the reduction or payment of the debt would be to cause a corresponding reduction both in credit balances and in advances in the books of the banks. Finally, if the debtor had a debit balance and the creditor a credit balance, the payment would result in an increase both in advances and in credit balances.

(iv) **SUBSCRIPTIONS BY THE GENERAL PUBLIC TO WAR LOANS, EXCHEQUER BONDS, TREASURY BILLS, OR OTHER SECURITIES ISSUED BY THE STATE.**—When customers of banks subscribe to these issues from balances standing at their credit with their bankers, there will be no ultimate effect<sup>1</sup> upon the aggregate credit balances, unless some of the subsequent disbursements by the Government ultimately reach accounts with a debit balance. In that case the result would tend to be a reduction in advances and also in credit balances. It is indisputable that a large amount of Government

<sup>1</sup> A leading banker writes: "This depends on the meaning attached to the word 'ultimate.' The immediate effect is, of course, depletion of balances, which have to be made up again by Government disbursements, when made in this country: when, however, the disbursement is made, say, in the United States and settled by gold, there is nothing to fill the gap. The same applies to subscriptions by the banks themselves, and the process is much the same. The issue of a large loan does disturb the aggregate amounts at the disposal of the banks to a large extent and for an appreciable period of time, and thus affects the money market, even if after a period the money or credit flows back from the Bank of England." Certainly, but subject to any extent to which our greater imports through this cause stimulate our exports. If that is new production (not production diverted from home consumption), it would ultimately augment both credit balances.

disbursements has reached accounts which before the war had a debit balance, representing an old loan of credit, transforming the debit into a credit ; but, owing to the influence of other causes, the extent of this movement cannot be stated quantitatively. On the other hand, where the customer of a bank has a debit balance at the time he subscribes to one of these issues or where, having previously had a credit balance, he borrows from his bank on the security of his Government scrip, bankers' advances and credits are both thereby proportionately increased.

(v) **SUBSCRIPTIONS BY BANKS TO WAR LOANS, TREASURY BILLS, EXCHEQUER BONDS OR OTHER SECURITIES ISSUED BY THE GOVERNMENT.**—The analysis of the effect of such subscriptions involves several stages. In the first instance the banks in return for their subscriptions receive a contract from the Government to pay them a certain rate of interest which is determined according to the terms of the special security, while the security itself is marketable. The subscribing by the banks to the loan means that a transfer is made from bankers' balances at the Bank of England (included in the heading "Other Deposits") to the balances in favour of the Government at the Bank of England (included in the heading "Public Deposits"). But the Government in its turn must draw upon its balances at the Bank in order to pay manufacturers and others what it owes them for goods and services. These payments are made by warrants which are eventually paid into the joint-stock banks in the form of credits in favour of the firms or individuals or in reduction of their debit balances. The warrants are finally accounted for by the Bank of England, which debits "Public Deposits" with the amount, and at the same time credits the joint-stock banks in "Other Deposits" with the sums for which they had previously given credit to their customers. It would appear as if in this process a complete circle had been traced and things would remain as they were before the banks subscribed to the loan; but, to continue the simile, the transaction resembles a widening spiral rather than a circle, leaving the banks with a great increase in credit balances. It would seem as if credit balance liabilities would be increased by the amount of bank subscriptions, and this in effect would tend to be so if there were no debit balances in the accounts of customers who receive payments of Government warrants. In such cases bank advances will decrease.

The effect of these two opposed tendencies and other counteracting causes is clearly shown by the striking difference between the amount of bank subscriptions to war loans and Treasury Bills, and the increase in the aggregate of credit balances. From the beginning of the war up to 31st December, 1915, it is known that the joint-stock banks of the United Kingdom had subscribed at least £300,000,000 to Government loans in various forms. Hence, if there had been no counteracting causes, their credit balances would have increased by an approximately equal amount: whereas between the same dates the aggregate of credit balances only increased by about £200,000,000, thus showing that at least £100,000,000 of new credit replaced that amount of old private credit.

(vi) **LOANS TO BRITISH COLONIES, ALLIES AND NEUTRALS.**—The effect of these upon the aggregate credit balances in the United Kingdom will vary with the character of the loan. (a) If the loan is remitted in the form of manufactured goods and the manufacturer receives payment indirectly in a war loan issued by the British Government, there will be no change in the aggregate of credit balances. (b) If the manufacturer received cash from the British Government, which cash that Government had borrowed, the effect upon the aggregate credit balances will depend upon whether the recipient of the cash had a debit balance at his bankers or not and the source of the borrowing by the Government. As already shown, if he had a debit balance, so far credit balances at his bank will not be increased: conversely, if he had a credit balance, there will tend to be a like increase in the credit balances at his bank. (c) If the loan is one for payment for purchases in the United States of America, and if it was effected by export of American securities from this country, then aggregate credit balances here might increase or might not increase according to the manner in which the British Government acquired possession of the American securities exported. As a rule, ordinary bankers' credits in the United States will not affect credit balances in the United Kingdom.

(vii) **ISSUES OF FOREIGN LOANS AND FOREIGN TREASURY BILLS ON THE LONDON MONEY MARKET.**—(a) When these are taken up by the general public, the position, as regards aggregate credit balances, is similar to the issue of an internal public loan—that is, such issue will not tend, as a rule, to increase credit balances (see

above (iv) and subject to the same important exception). (b) When the subscription has been made by banks there will be the converse tendency, namely, an increase in credit balances (see above (v)).

(viii) CHANGES IN THE AMOUNT OF FLOATING FOREIGN BALANCES IN LONDON.—Where these changes were due to export or imports of gold, the aggregate of credit balances in the United Kingdom will generally have tended to decrease or to increase—exports of gold tending towards a decrease and conversely. If, on the other hand, the change were due to exports of goods, the accounts of the exporters of the goods would be credited with the proceeds of the goods, while the foreign balances would be debited. Thus the net effect on credit balances would tend to be either a reduction in the aggregate or else no change in it—the former arising when the credit for exports went to an account with a previous debit balance. Conversely a change in the floating foreign balances in London due to imports would result either in an increase or else in no alteration in the aggregate of credit balances.

(ix) THE SELLING OF FOREIGN INVESTMENTS TO FOREIGN COUNTRIES.—The effect of such sales upon aggregate credit balances in the United Kingdom depends upon the source of the sale and the way in which payment is made. If the sale is made to agents in London of a foreign financial house, then floating foreign balances in London will be proportionately reduced, while the bank accounts of the sellers will be credited.

(x) THE RAISING OF LOANS IN FOREIGN COUNTRIES.—When a loan is floated in the United States of America and the credit thereby created in America is drawn against to pay for exports from the States to the United Kingdom, debits and credits of equal amounts will be created in the books of banks in the United Kingdom.

(xi) THE ISSUE OF CURRENCY NOTES.—The effect of this issue upon the aggregate of credit balances is determined by the extent to which the notes in circulation are covered by gold. While the outstanding issue has shown an almost continuous increase, the amount of gold held against them, namely £28,500,000, has remained unchanged since our former report until the date of writing. According to the return of 11th August, 1916, the currency note redemption account consisted of £28,500,000 in gold, £94,702,056 in Government securities, and a balance of £7,723,762 at the Bank of

England. These figures show that the Government had drawn against the greater part of the uncovered issue to the extent of about £100,000,000. But most of these drawings, in their turn, will have been credited to customers of joint-stock banks in the manner explained above in (v). Therefore, this operation will have tended to increase the clearing balances of joint-stock banks at the Bank of England.

(xii) **INCREASE OF BANKERS' LOANS ON SECURITY.**—While banks have made great loans to the Government in various forms, other bankers' loans have decreased since the beginning of the war. Still the total of all kinds of loans by banks has greatly increased, and this process has been accompanied by a very material increase in the credit balance liabilities of banks. Thus, though it may not be possible to express quantitatively the exact amount of the increase of or decrease in the aggregate credit balances which is to be attributed to any one of the factors enumerated, still, when they are considered as a whole and their combined effect is observed, it is clear that there is a substantial expansion of credit, which it may be estimated amounted at 31st December, 1915 (as far as the joint-stock banks of the United Kingdom are concerned), to at least £200,000,000 since the beginning of the war.

Up to this point, the causes of an increase in credit since the outbreak of war, as far as they are manifested in the transactions of joint-stock banks, have been examined in relation to the mechanism of banking, but it remains to be investigated what are the reasons which have rendered this extension of credit possible. Indeed, so far the fact has been established, and it has been shown how it has happened. It remains, however, to give a fuller explanation of why this change has taken place, and, for a complete treatment of that question, reference is required to the state of the currency which will be dealt with in the next section. But before passing on to that inquiry it will be advisable to complete the present investigation by directing attention to another aspect of the same general situation, namely the variation in the deposits in the Post Office and Trustee Savings Banks since the commencement of the war.

From statements printed in Tables I and II, it will be observed that in 1913-14 the total cash funds due to depositors in trustee savings banks increased by a smaller sum than in any one of the four previous years, while in 1914-15 they decreased by 4 per cent.

In the Post Office Savings Bank the amount due to depositors had increased on average by over £5,000,000 per annum during the years 1910, 1911, 1912 and 1913, whereas in 1914 the increase was reduced to £3,285,041. The same Tables show some interesting variations in the liabilities of the Government on account of savings banks. During the first two months of the war savings bank deposits showed a tendency to decline—the actual decrease from 11th July, 1914, to 5th September of the same year being about £5,300,000 or over 2 per cent. of the accumulated funds. This decline cannot be attributed altogether to the war, since in previous years there is usually a decline in these months due to the withdrawals for the holidays. From October to December the deposits remained stationary after allowance is made for the crediting of interest amounting to £729,691 to the fund for the Trustee Savings Banks. Similarly the apparent increase during January, 1915, is to be assigned to the crediting of interest to the Post Office Savings Bank on 31st December, 1914. From 23rd January, 1915, to 12th June, a continuous increase is recorded, amounting during the twenty weeks to about £8,000,000, in which is included £742,688 interest credited on 20th May to the fund for Trustee Savings Banks. It is significant that the increase for the first twenty-three weeks of 1915 was approximately twice that for the same period in 1914 and three times that for the same period in 1913. Higher wages during 1915, and the deposit of sums hoarded during the early months of the war may account for this striking change. It has not been necessary to interrupt the course of the narrative to take account of the issue of the 3½ per cent. War Loan which was made on 17th November, 1914, since it does not appear to have had any appreciable effect upon savings bank deposits. But the appearance of the 4½ per cent. War Loan on 21st June, 1915, produced a marked effect. The widespread patriotic appeals through the *Press* induced very considerable subscriptions from depositors in savings banks. Most of these subscribers paid up in full under the provision which granted discount for payments in advance. Accordingly, during the four weeks from 11th July to 7th August, the Trustee Savings Banks lost £4,200,000 and the Post Office £15,900,000, a total of £20,100,000. The proportion of these withdrawals to the total funds was the same in each case, being 8 per cent. It may seem a little hypothetical to identify the decrease for this period with

investments by the depositors in War Loan. In order to check this method of calculation a special investigation was made by the Actuary of the Glasgow Savings Bank (which is the largest in the kingdom, having at 20th November, 1915, a balance due to depositors of £11,719,513) as to the total investments by depositors in war loans up to that date, which yielded an amount of £1,112,039, or about 9 per cent.

The variation in Trustee and Post Office Savings Bank deposits is an interesting indirect confirmation of the analysis of the credit balances of the joint-stock banks. In the former case deposit banking as such is isolated, and the fluctuation of aggregate deposits is influenced by the amount of income of the classes using the banks and by the habits of thrift at the time. In the case of joint-stock banks the credit balances are subject to the reaction of the advances of the bank and the other causes already detailed. Accordingly the apparent diversity in the movements of each class is in fact a testimony to the diverse causes which govern their respective fluctuations.

*Table I*  
BANKING DEPOSITS (EXCLUDING BANK OF ENGLAND  
AND SAVINGS BANKS)

Extracted from the *Economist*, 20th May, 1916, pp. 906 and 907  
(000's omitted)<sup>1</sup>

Year.	Joint Stock Banks of			Private Banks.	Total.	Increase per annum.
	England and Wales.	Scotland.	Ireland.			
1895	£ 455,561	£ 94,592	£ 44,390	£ 70,372	£ 664,915	£
1900	586,726	107,154	49,449	40,420	783,749	23,767
1905	627,529	100,643	53,556	27,775	809,503	5,151
1906	647,890	105,232	54,697	26,749	834,568	25,065
1907	648,596	108,723	57,487	26,958	841,764	7,196
1908	674,660	105,787	59,253	23,634	863,334	21,570
1909	685,040	106,736	60,463	25,690	877,929	14,595
1910	720,687	106,652	62,508	26,808	916,655	38,726
1911	748,641	112,209	65,465	27,099	953,414	36,759
1912	773,974	118,795	66,901	26,753	986,423	33,009
1913	809,352	125,887	70,657	27,090	1,032,986	46,563
1914	895,561	132,504	74,501	32,874	1,135,440	102,454
1915	992,555	140,569	77,722	32,891	1,243,737	108,297

<sup>1</sup> In connection with the above figures it has to be borne in mind that the total increase shown since 1895 does not represent exact true growth, for joint-stock banks have at times absorbed private banks which did not publish balance sheets.

Table II

STATEMENTS RELATING TO TRUSTEE SAVINGS BANKS AND  
THE POST OFFICE SAVINGS BANK

(Prepared by Mr. A. H. Gibson)

## A.—SUMS DUE TO DEPOSITORS

(i) *Trustee Savings Banks*

Sums due to Depositors

Year ending Nov. 20.	No. of Banks.	No. of Depositors.	Increase.	General Departments.	Investment Depts.	Total.	Increase + Decrease -
1910	219	1,827,460	22,565	52,267,806	10,896,322	63,164,128	+ 1,299,061
1911	215	1,849,043	21,583	53,032,596	12,120,229	65,152,825	+ 1,988,697
1912	211	1,870,510	21,467	53,811,899	13,306,123	67,118,022	+ 1,965,197
1913	202	1,912,820	42,310	54,258,861	14,289,116	68,547,977	+ 1,429,955
1914	196	1,917,944	5,124	53,943,271	15,510,615	69,453,886	+ 905,909
1915	191	1,966,700	48,756	51,412,900	15,377,200	66,790,100	- 2,663,786 <sup>1</sup>

(ii) *Post Office Savings Bank*

Year ending Dec. 31.	No. of Depositors.	Increase.	Amount due to Depositors.	Increase.
1910	8,371,789	458,494	168,890,215	4,294,150
1911	8,453,178	81,389	176,518,508	7,628,293
1912	8,868,008	414,830	182,104,564	5,586,056
1913	9,180,950	312,942	187,248,167	5,143,603
1914	9,281,370	100,420	190,533,208	3,285,041

B.—LIABILITIES OF THE GOVERNMENT ON SAVINGS BANK ACCOUNT<sup>2</sup>

At	Total amount at the credit of		Total.	Increase + Decrease -
	The Fund for the Banks for Savings (Trustee Savings Banks)	The Post Office Savings Bank Fund.		
1913.	£	£	£	£
Jan. 25	53,361,235	183,341,639	236,802,875	+ 2,362,300
Feb. 22	53,400,201	183,945,106	237,345,307	+ 542,432
Mar. 22	53,323,845	183,586,021	236,909,867	- 435,440
April 19	53,252,589	185,107,288	238,359,877	+ 1,450,010
May 17	53,036,692	184,814,049	237,850,741	- 509,136
June 14	53,643,853	184,840,827	238,484,680	+ 633,939
July 12	53,576,383	185,694,792	239,271,175	+ 786,495
Aug. 9	53,196,901	185,158,141	238,355,042	916,133
Sept. 6	53,169,217	184,829,002	237,998,219	356,823
Oct. 4	53,234,838	185,122,119	238,356,957	+ 358,738

<sup>1</sup> The decrease shown was less than the increase in Government Stock held for Depositors.

<sup>2</sup> The figures given in the above table do not represent the exact amounts due to depositors of the two classes of savings banks at the respective dates, but are the amounts which have been handed over by the savings banks for investment by the National Debt Commissioners, in conformity with the

## B.—LIABILITIES OF THE GOVERNMENT ON SAVINGS BANK ACCOUNT (cont.)

At	<i>Total amount at the credit of</i>		Total.	Increase + Decrease -
	The Fund for the Banks for Savings (Trustee Savings Banks)	The Post Office Savings Bank Fund.		
1913.				
Nov. 1	53,363,294	186,487,600	239,850,894	+ 1,493,937
,, 29	53,395,267	187,024,581	240,419,848	+ 568,954
Dec. 27	53,557,849	186,246,579	239,804,428	- 615,420
1914.				
Jan. 24	53,595,108	188,781,224	242,376,332	+ 2,571,904
Feb. 21	53,758,435	189,396,492	243,154,927	+ 778,595
Mar. 21	53,904,592	189,935,779	243,840,371	+ 685,444
April 18	53,939,455	190,652,680	244,592,135	+ 751,764
May 16	53,799,052	190,748,413	244,547,465	- 44,670
June 13	54,549,025	190,791,971	245,340,996	+ 793,531
July 11	54,482,781	192,044,322	246,527,103	+ 1,186,107
Aug. 8	52,979,463	191,516,822	244,496,285	- 2,030,818
Sept. 5	52,786,574	188,389,779	241,176,353	- 3,319,932
Oct. 3	52,792,530	188,280,044	241,072,574	- 103,779
,, 31	52,935,990	189,671,969	242,607,959	+ 1,535,385
Nov. 28	53,009,464	190,286,806	243,296,270	+ 688,311
Dec. 26	53,344,415	189,387,699	242,732,114	- 564,156
1915.				
Jan. 23	53,565,689	192,677,041	246,242,730	+ 3,510,616
Feb. 20	53,759,982	193,802,898	247,562,880	+ 1,320,150
Mar. 20	54,019,045	195,306,492	249,325,537	+ 1,762,657
April 17	54,255,525	197,526,647	251,782,173	+ 2,456,636
May 15	54,273,403	198,754,244	253,027,647	+ 1,245,474
June 12	55,118,286	199,156,455	254,274,741	+ 1,247,094
July 10	54,607,264	197,512,474	252,119,738	- 2,155,003
Aug. 7	50,371,832	181,648,755	232,020,587	- 20,099,151
Sept. 4	49,825,817	181,632,306	231,458,123	- 562,464
Oct. 2	49,990,562	182,200,289	232,190,851	+ 732,728
,, 30	50,245,966	184,041,501	234,287,467	+ 2,096,616
Nov. 27	50,428,515	185,105,313	235,533,828	+ 1,246,361
Dec. 25	50,993,997	185,792,974	236,786,971	+ 1,253,143
1916.				
Jan. 22	51,132,999	188,761,230	239,894,229	+ 3,107,258
Feb. 19	51,114,592	186,803,842	237,918,434	- 1,975,795
Mar. 18	51,127,853	188,630,649	239,758,502	+ 1,840,068
April 15	51,202,117	190,177,877	241,379,994	+ 1,621,492
May 13	51,216,343	190,645,001	241,861,344	+ 481,350
June 10	52,117,245	192,669,014	244,786,259	+ 2,924,915
July 8	52,306,657	194,520,479	246,827,136	+ 2,040,877

Savings Bank Acts. The Trustee Savings Banks keep a small cash balance with local joint-stock banks, and the Postmaster-General also keeps a small balance on Savings Bank Account to meet current withdrawals. These cash balances in both cases are, however, usually less than 1 per cent. of the liabilities to depositors, so the fluctuations in the figures stated in the table may, therefore, be taken as representative of the experience of the savings banks since the commencement of 1913. The figures for the Trustee Savings Banks do not in any way include the funds of the Special Investment Departments of the Trustee Savings Banks, for the funds of such departments are not handed over to the National Debt Commissioners, but are invested direct by the Trustees of the banks, subject to certain statutory restrictions, largely in temporary Government loans and in local loans.

## III. CURRENCY

IN our previous report we dealt with the causes which occasioned the emergency issue of paper money in the form of Currency Notes (*Report*, pp. 10-11, *Credit, Industry and the War*, pp. 216-17). Gradually, as the credit position became less abnormal, the need for an emergency currency became less, but a new function was super-added, namely, the desire to concentrate the country's stock of gold (cf., article by Professor Foxwell in *Economic Journal*, XXV, p. 558). The gold coin circulating in time of peace constitutes in fact a species of concealed national reserve which may be drawn upon, with due and proper safeguards, in time of war. From this point of view the intention was to displace gold from circulation and to attract it to the Treasury, as was shown by the notices addressed to the public inviting them to exchange gold coin for these notes at the post offices and banks. As yet, for reasons detailed below, the latter plan appears to have met with only a meagre degree of success. Since the notes were issued as legal tender in the United Kingdom, and as convertible into gold coin, on demand at the Bank of England in London (4 & 5 Geo. 5, c. 14 §1, 3), it is necessary that an adequate reserve of gold should be held against the notes. Needless to say it is undesirable that at the present juncture this right of conversion should be exercised by the public without due cause, but the maintaining of a fully adequate reserve together with clear intimation of the convertibility of the notes would tend towards the apparently paradoxical effect of diminishing possible demands by the public for gold in exchange for the notes. What is more important, it would also conduce to a diminution of the hoarding of gold. Accordingly, it seems probable that, in addition to the inscription on the notes that they are legal tender for any amount, it should be added in plain terms that they are payable in gold on demand according to the conditions of the Currency and Bank Notes Act. An instance has come under our notice which points to a considerable degree of ignorance as to the convertibility of the notes. In a class of considerable size—most of the members of which were bank clerks—"it was not generally known that these notes were payable in gold at the Bank of England." If such absence of information as to the convertibility of the notes is typical, it seems to us that instead of a centripetal tendency being established as regards gold, it is likely that gold

will pass out of circulation to a considerable extent only to be hoarded. Conversely, if the public were fully convinced that the notes were representative of gold and that gold could be obtained for them on demand, many of those, who are now hoarding gold, would cease to do so. In fact, concealment of the convertibility of the notes is a contributing cause of the concealment of gold.

Further, the adequacy of the gold reserve held against the notes and currency certificates is important. The following table shows the amount of notes outstanding and the gold and bullion held against them—

#### CURRENCY NOTES ACCOUNT

	Notes and Certificates Outstanding.	Gold Coin and Bullion.	Rates to Notes.	Government Securities.	Balance at Bank of England.
1915. June 30	46,576,801	28,500,000	62.3	9,588,827	7,974,877
Dec. 29	103,125,099	28,500,000	27.6	54,620,563	20,535,864
1916. June 14	120,551,144	28,500,000	23.6	84,720,171	8,852,165
.. Aug. 16	129,948,401	28,500,000	22.0	96,644,077	7,053,648

These figures show a great rise in the amount of the issue while the amount of gold held against the notes has remained stationary. With the experience which has now been obtained, it should be possible to decide upon the ratio which is necessary in order to protect the notes. If an additional margin were allowed for any unforeseen contingencies, better uses could be found for the gold than in adding it to the currency note reserve during the war period, always subject to the condition that the total issue should not exceed the needs of the country for currency.

Further, since the issue seems to have passed from the category of a purely emergency one, and while it is no doubt not intended to be permanent, it seems likely to last for some time, therefore it requires to be regulated in order to check the very grave dangers of over-issue. What Jevons wrote over forty years ago still remains true. "It is the issue of paper representative notes, accepted in place of coin, which constitutes an arbitrary interference with the natural laws governing the variations of a purely metallic currency, so that strict legislative control in one way leads to more real freedom in another." (*Essay on Money*, 1885, p. 342.) At the same time, while in Jevons' phrase the legislative control should

be "strict," the mechanical rigidity of the Acts regulating the issues of the Bank of England should be avoided. Control which, at the same time, allows for elasticity should be the object aimed at.

In our previous *Report* some doubt was expressed as to the extent to which the notes would be subject to forgery. Though it was stated in Parliament that large numbers of forged notes, particularly of the 10s. value, had been in circulation in the Midlands in the summer of 1915, the Chancellor of the Exchequer was able to reassure the House of Commons by vouching for the fact that the number of forgeries was not considerable (*Parliamentary Debates—Commons*, lxxvi). It ought to be possible, if the notes are to circulate during the war period, to secure a more satisfactory design and a type of note which would be easier to handle. The experience of the Scottish and Irish banks in the manufacture of their £1 notes should be of value.

Allusion has already been made to the requirements for additional currency at the outbreak of war in order to meet the needs of mobilisation and to replace small quantities of gold coins which had been transmitted unobserved to foreign countries. In addition, further currency has been required owing to the hoarding of gold by the general public, to the augmented liabilities of the joint-stock banks on account of their increased deposits (as explained in the previous section) which require an increase in their reserves of legal tender, also to provide additional money to effect exchanges at the recent higher prices of many commodities as well as to pay wages, where the amounts have increased.

In the previous section of this report reference has been made to the effect upon bank credits of the issue of that part of Currency Notes which is not covered by gold, and the corresponding question arises as to the chief consequences of this issue upon the circulation. Here it is obvious that one of the most important inquiries is the quantity of money (in the form of legal tender and token money) actually in circulation amongst the general public before the war and the corresponding quantity at a later date, such as 31st December, 1915, or 30th June, 1916. A comparison between these totals would show the extent to which the amount of currency has increased at the later date. Then it would be necessary to inquire, to what extent the increase was due to increased "money-work" which required to be done. The reference to higher general prices

would not be a valid explanation; since, at this stage of the inquiry, the question of prices is, so to speak, *sub judice*, in so far as the increase may be caused either in whole or in part, or again may not have been caused, by an increase in the currency. Therefore, the first step in the inquiry indicated is to calculate the amount of money in actual circulation before the war as compared with that at a more recent date. In view of the difficulties experienced by Jevons in his endeavour to calculate the quantity of gold coin in circulation in his day, it is fortunate that since 1895 estimates have been framed by the authorities of the Royal Mint, and the Chancellor of the Exchequer, in reply to a question by Mr. D. M. Mason, stated that the amount of gold coin held by the public on 30th June, 1914, was £78,300,000, while that held by banks of the United Kingdom (including the Bank of England) was £82,800,000 at the same date, the figure on 30th June, 1915, having increased to £110,200,000. Now, as regards the gold coin held by the public at 30th June, 1914, this requires to be divided into the quantity in circulation and that hoarded. Since the question of hoarding before the war may apply to notes as well as to gold, the further discussion of this estimate must be postponed, till the amount of notes in circulation has been estimated. On 30th June, 1914, the active circulation of the Bank of England was £29,784,295. It is well known that the greater part of this total is held by the joint-stock banks, and we estimate that about £8,000,000 of these notes were in the hands of the general public. There is reason to believe that the corresponding figure in April, 1916, was about £10,000,000, or an increase of £2,000,000. The notes of the provincial banks in England, being less than £100,000, do not affect the circulation to any material extent. The issues of the Scotch and Irish banks are much more considerable. According to the returns of the *London Gazette* in June, 1914, the issue exceeded £16,000,000, and of that amount it may be estimated that about £16,000,000 was in the hands of the general public. By April, 1916, the issue had increased to £29,000,000. Finally there was the token currency. The amount of silver in the hands of the public at 30th June, 1914, may be estimated at £15,000,000, and that in April, 1916, at about £30,000,000.

It would be an error to consider the whole of notes and of coin in "the hands of the general public" at 30th June, 1914, as serving

the purposes of a medium of exchange. A certain unknown proportion of it was hoarded. When an attempt is made to account for money which is not in circulation, it is necessary to distinguish between coin and notes which have been lost or destroyed, and that which is hoarded. Moreover, these two classes are not permanently distinct. Coin which has been lost for a long period may be discovered, whereas a hoard may in course of time be lost. Still, at any given time the two classes are relatively distinct. Further, there is a certain amount of transference between money in circulation and money hoarded, inasmuch as hoards are formed from money in circulation, while in course of time some hoards return to circulation. There was a difference in the type of hoarding in England, as compared with that in Scotland and Ireland, in the period before the war. In the former the great majority of hoards consisted of gold, in fact, the only alternative was Bank of England notes, and the proportion of these available relatively to the gold was comparatively small, also the unit of £5 was one which was too high for many who began to hoard. In Scotland and Ireland, on the other hand, the people were habituated to a paper currency; and, in the country districts, there was some hoarding of notes, but our inquiries led to the conclusion that gold was preferred for this purpose. Still, it is interesting to observe that we have obtained particulars of occasional hoards of notes, some of which had been undisturbed for many years. Two methods were tried for arriving at a quantitative result, but both proved unworkable. The one was to have obtained particulars of the amount of notes which had been outstanding for a very long period, but in any such figure there would be the disturbing element that this total would contain the notes which had been lost or destroyed. Again, it seemed that useful information might be derived from the date of issue of notes which returned from circulation. But this method was made highly uncertain by the practice of the Scottish and Irish banks of reissuing notes until they reach a certain state of deterioration. Hence a note of old date may have been in circulation during the whole period, but may have been carefully handled, and thus remained long in a condition justifying its repeated reissue.

Hoarding of coin was likewise practised, again more largely in remote districts than in the towns. The former, being relatively poor areas with a low density of population, would not be an

important element in the determination of an estimated total. Our attention was drawn to one particular phenomenon which, though not large in any one year, would have an appreciable influence over a long period. This was the alleged practice of Irish migratory labourers to bring back to Ireland what they had saved from their wages in England or Scotland in the form of gold, and it was suggested that a considerable part of this was hoarded. As regards England, it would be inevitable that the wages saved should be brought back in gold, for many inquiries show that these workers are not in the habit of making remittances to their homes during their absence. They are simple people and, not being acquainted with the design of Scotch bank notes, the latter would not be as acceptable to them as gold. Besides, if they carried the notes to Ireland, they would have difficulty in changing them, and in any case a charge would be made. So, on the whole, there is evidence that gold went from England and Scotland to Ireland in this way. Whether it was hoarded is another question. Migratory labourers belong to a poor class; and, while no doubt there would be a disposition to hoard, the pressure of circumstances would gradually force out the gold. Thus the main effect of the process would be a very great reduction in the rapidity of circulation as far as this particular quantity of gold was concerned. There is, however, some apparently strong evidence upon the other side. We have been fortunate in obtaining a detailed return of the amount of surplus gold sent from a branch of a bank in a district (where there are many of these migratory labourers) to its head office. Taking the average for the years 1908, 1909, 1910, as compared with 1913, there was a reduction in the amount of no less than 53 per cent. in 1913, which would point to an addition to the amount hoarded in the earlier period, if any. The total number of Irish migrating labourers has been falling. It was 40,000 in 1841, 20,500 in 1909, and 15,000 in 1913.

Since the war it appears that hoarding has shown some increase. The effect of the war, with the large circulation of money which has ensued, has enabled those with the hoarding instinct to add to their stores. The demand for agricultural produce at high-prices has tended to augment the surpluses at the disposal of small holders in remote agricultural districts, higher wages in the munition areas have enabled some of the workers to accumulate funds, part of

which may not have found their way to the savings banks or to investments in the Government loans provided for this class. Then amongst the remainder of the community the disturbance of war has in some cases occasioned the retaining of a larger quantity of gold coin than formerly, presumably as some sort of reserve against emergencies. Reports from a number of country districts show that withdrawals early in the war have not yet all been returned to the banks, and it is the opinion of bankers that these funds are hoarded. In these districts, also, there is frequently a disposition only to lodge a part of sums which have accumulated since the war in banks. Again, somewhat curious illustrative instances are provided by police reports of the property stolen in recent burglaries in England, where sums of £50 to £250 were recorded as having been in sovereigns. It seems probable that in a very considerable number of cases during the early months of the war people retained sovereigns they received in change, and that these retentions now become small hoards. Again, during the recent troubles in Ireland, according to reports in the Press (which, however, may not be reliable), some of the Sinn Feiners were found to have considerable quantities of gold upon their persons, in one instance as much as £600 was mentioned. The source whence this gold (which was in sovereigns) was obtained is obscure, since the Irish banks are not paying it out. Banking opinion in Ireland points to its having been procured by the cashing of Bank of England notes at the Bank, but it is significant that for some time before the outbreak there were traces of gold commanding a premium in Dublin. The destruction of property during the rising has had the effect of bringing some hoards to the banks, through the feeling of the risk of fire or other damage to house property. Hoarding is almost always illogical, and so far as anything can be predicted of it, its temporary character should be emphasised, so that the tendency would be for such hoards to be returned to circulation, doubtless gradually, but before very long.

Though these data are far from being complete, they afford some basis for estimating how far the issue of Currency Notes constitutes an addition to the circulation. On 31st May, 1916, the amount of Currency Notes and Currency Note certificates outstanding was returned at £118,549,574. But this amount was not all in circulation amongst the public. The Currency Note certificates are held by banks; and, in addition, the banks hold a large quantity of the

notes. The total under both heads may be estimated at £40,000,000. This leaves £78,500,000 of the notes as in the hands of the public, a small part of which may be hoarded. But, according to the Mint calculation, already mentioned, the gold in the hands of the public on 30th June, 1914, was £78,300,000. A small, but a daily diminishing quantity, may be still in circulation, therefore the respective quantities in the hands of the general public in terms of gold and Currency Notes would compare as follows, namely at 30th June, 1914, £78,300,000 of gold, at 31st May, 1916, £78,500,000 of Currency Notes together with any small quantity of gold still in circulation, but as against the latter allowance must be made for increased hoarding; and it may be further estimated that increased hoarding of gold since the war might roughly balance the amount of gold remaining in circulation. Hence there would appear to be no increase in the money in circulation, as far as that in the hands of the public is concerned, by the issue of Currency Notes. The increase under this head is in Bank of England notes, Scotch and Irish notes, and in silver. But this does not mean that the issue of Currency Notes has not added to the circulation in other directions. The Currency Notes certificates are understood to be held largely against the increased note issues of the Scotch and Irish banks, but other Currency Notes held by banks, being legal tender, enable them to increase reserves against their liabilities. Also much of the gold displaced from circulation by the Currency Notes went, at least in the first instance, to the banks and facilitated an extension in credit; while, as shown above, the nominal amount of the notes uncovered by gold was likewise instrumental in increasing the aggregate of customers' credit balances. Thus, as far as the argument has been developed, the issues of Currency Notes has affected the whole circulation of the country altogether, or almost altogether, in increasing "bankers' money."

The pivot of the previous reasoning has been the estimate of gold coin in the hands of the public at 30th June, 1914. No details were given as to the basis upon which it was compiled, but *The Report of the Deputy Master and Comptroller of the Mint for 1910* (pp. 99-101) gives particulars of the basis of calculation then adopted. In 1895 it was estimated that the gold in active circulation and held in reserve by the banks amounted to £92,500,000. In 1903 the total amount held in the United Kingdom (including that in

possession of the banks) was calculated to have been at least £100,000,000. This figure is accepted as the basis for subsequent estimates. In continuing the estimate to 31st December, 1910, Sir W. Ellison-Macartney, then Deputy Master, had the following data and estimates: the amount of gold coin withdrawn from circulation to be used as bullion (which was known), the amount of light coin withdrawn (likewise known), the mint issues and exports of gold (both known), the amount of coin melted or otherwise used for manufacturing purposes and that carried out of the country by travellers (both of which must be estimated). Finally, as to the division of the quantity so arrived at between the banks and the general public, this is obtained by deducting the gold held by the banks, the amount of which is recorded at the Mint at 30th June in each year. Starting, then, with the total of £100,000,000 as held by banks and the public in 1903, there was added up to 31st December, 1910, £104,300,000 under the head of Mint issues. From that there was deducted the balance of exports and imports of gold during the seven years being £66,000,000. The total withdrawn, as light coin and as converted into bullion, was £19,300,000 while the estimate for coin consumed in manufacture was £300,000. These items give a total of £85,600,000—which, deducted from the Mint issues of £104,300,000, leaves a balance of £18,700,000. That balance is subject to the deduction of “the invisible exports” of gold by travellers, which, during the seven years is calculated to have been £5,700,000, yielding a net addition of £13,000,000, and making the total gold coin in the kingdom in 1910 £113,000,000. The statistics of the banks show that these institutions then held £44,000,000, leaving £69,000,000 in the hands of the general public. Between 31st December, 1910, and 30th June, 1914, three and a half years elapsed; and, the total net addition in that period was £48,100,000, from which it appears that the authorities of the Mint have deducted from the excess of Mint issues over withdrawals and the excess of declared exports over imports a round sum of about £1,000,000 per annum, as an estimate for coin used in manufacture or which left the country as an invisible export. This left a net amount (in the hands of the banks and of the general public at 30th June, 1914), of £161,100,000, of which £82,800,000 was held by the banks, and the remainder, amounting to £78,300,000 was held by the general public.

SUMMARY OF MINT STATEMENTS FROM 1903 TO 1910 AND  
CONTINUATION TO 30TH JUNE, 1914

		Mil. £'s
1903.	Estimated total amount of gold coin in the United Kingdom . . . . .	100
1903 to Dec. 31, 1910.	<i>Add</i> issues of the Mint . . . . . <i>Deduct</i> withdrawn from circulation as bullion or as light coin . . . . .	104.3 19.3
	“ Used in manufacture (estimated) . . . . . “ Gold coin withdrawn from the United Kingdom on balance of exports and imports . . . . . “ “ Invisible exports ” of gold coin . . . . .	.3 66      85.6      18.7 118.7 5.7
	Estimated amount of gold coin in the United Kingdom, Dec. 31, 1910 . . . . .	113
1911 to June 30, 1914.	<i>Add</i> excess of Mint issues over with- drawals and over the excess of declared exports over imports, and <i>Deduct</i> gold coin lost, melted down or taken abroad by travellers (est- imated) . . . . .	48.1 161.1
	<i>Deduct</i> amount held by banks at June 30, 1914 . . . . .	82.8
	Balance being amount held by general public at June 30, 1914 . . . . .	78.3

Subject to the possibility that the initial estimate for 1903 may have been too high, it will be observed that, in the period of ten and a half years covered by these estimates, there are only two doubtful elements, namely the deductions to be made for coin used in manufacture and for “ invisible exports.” In the second period it appears that the amount allowed for these losses is estimated to account for about £1,000,000 a year. From 1903 to 1910 the coins used in manufacture and those lost to circulation as invisible exports are stated separately; and for that period the former averages only £43,000 a year, and the latter £814,000 a year. No method has occurred to us by which the estimate for invisible exports could be either confirmed or corrected. As regards the other part of the estimate—that relating to the consumption of coin in manufacture—the very small figure of £43,000 per annum calls for some explanation. On 16th January, 1916, the Chancellor of the Exchequer, on being asked to state the quantity of gold

melted by jewellers in 1915, replied that he was unable to supply any data (*Parliamentary Debates*, lxxvii, pp. 1762-3). It appears that, when the authorities of the Mint were making the investigation of 1910, summarised above, no less than eighty firms had provided detailed information, and it was upon the basis of these replies that the conclusion had been reached that the amount of gold coin consumed in manufacturing operations during the seven years did not exceed £300,000. It is possible that this result influenced the subsequent estimate for the period from 1910 to 30th June, 1914, which we believe to have been about £1,000,000 per annum for losses through this cause and by "invisible exports." Great as is the authority of the Mint upon a topic of this nature, it seemed to the Committee that the position deserved more recent investigation, and inquiries were made amongst manufacturing jewellers and dental manufacturers and suppliers, and others. As regards the use of British gold coin before the war, we have received estimates of a consumption as high as £3,000,000 in a normal year before the war; while Mr. A. H. Gibson made an independent calculation, based on the imports and exports of gold during the twenty years from 1894 to 1913, and estimated the gold coins melted and taken abroad by travellers at £2,000,000 to £3,000,000 a year. In the jewellery trade, we learn that wedding rings were usually made from sovereigns. Then in dentistry the use of British gold coins before the war does not appear to have been considerable, though it existed. Coined gold is either melted or rolled for "crown" and "bridge" work. The incentive to use sovereigns arises as follows: A sovereign weighs about .255 oz., and the same weight of 22 carat gold at 88s. per oz. would cost 22s. 5d. Thus by using four sovereigns the dentist would make an apparent saving of about 9s. per oz. Against this there has to be taken into account that the melted or rolled sovereign is much more difficult to work, and so the saving in cost of material is likely to be lost by the waste of time involved. American dentists in this country are reported to use a considerable number of the gold coins of the United States, chiefly \$10 and \$20 gold pieces. Since representations were made by the Government to trades which smelted gold coins, the practice as regards dentistry is said to have ceased. Therefore the loss to the coinage from this source would terminate at the period when these representations were made, save for the occasional melting of some sovereigns by

a few dentists in their own workshops. On the whole, it would seem that before the war there was a small but still appreciable loss of British gold coins through dentistry, and that in all probability such loss would account for a considerable part of the total estimated loss of £43,000 a year from 1903 to 1910. If that be so, it is clear that no sufficient margin remains to cover the use of gold coin in other trades.

We do not feel in a position to express a definite opinion at the present stage as to whether the figure returned by the Mint for the gold coin in the hands of the general public at 30th June, 1914, was an overestimate or not. The various considerations already adduced point to the need for further inquiry, and by the time this report appears in print the authorities of the Mint will have had a unique opportunity either to confirm or correct the estimate of Sir W. Ellison-Macartney made in 1910, since it should be possible by then to trace the gold coin believed to be in the hands of the public at 30th June, 1914. If it did amount to £78,300,000, then that sum will have returned from circulation subject to the comparatively small amount which is hoarded. Upon our present information it is exceedingly difficult to account for that amount of coin, unless we suppose that the quantity remaining in circulation and hoarded is much larger than there is reason to believe it to be. Moreover, the present opportunity for effecting a census of the country's gold coin is one which is quite exceptional and is most unlikely to return.

This element of doubt, for we have no desire to state it more strongly than that, calls for a revision of the provisional conclusion which was derived from the official estimate. If the amount of gold coin at 30th June, 1914, in the hands of the public was not £78,300,000 but a smaller sum, it follows that, when Currency Notes were issued up to £118,000,000, then there was an excess in the issue (also in the hands of the public), as compared with gold displaced, to the extent to which the official figure of £78,300,000 is an overestimate. If this exists, that sum must be added to the increase in Bank of England notes, Scotch and Irish notes, and silver, in the hands of the public as representing the increase in the currency under this head. If, on the other hand, it should turn out that the estimate of £78,300,000 is sustained upon further examination, then there would not be an increase in the Currency

Notes in the hands of the public till the issue exceed £118,000,000 in comparison with the gold coin which they displaced as taken at 30th June, 1914. The increase in the currency would be confined to that in bank notes, to which that in silver may be added, and particularly to the growth of bank credits, full particulars of which have been recorded in the previous section.

Finally, it may be observed that in the foregoing calculations, all reference to rapidity of circulation has been designedly omitted. This question arises more naturally in the next section, when the question of prices will be considered.

#### NOTICE ISSUED BY THE TREASURY, 8TH AUGUST, 1915

In view of the importance of strengthening the gold reserves of the country for exchange purposes, the Treasury have instructed the Post Office and all public departments charged with the duty of making cash payments to use notes instead of gold coins whenever possible. The public generally are earnestly requested, in the national interest, to co-operate with the Treasury in this policy by (1) paying in gold to the Post Office and to the banks; (2) asking for payment of cheques in notes rather than in gold; (3) using notes rather than gold for payment of wages and cash disbursements generally.

#### IV. PRICES

The rise in prices has attracted much attention amongst the public. But, when causes are assigned to explain the phenomenon, the various reasons given are often prompted by certain aspects of the situation which are forced upon the attention of each individual observer by his own personal experience. Thus those who are much occupied with monetary transactions see in alterations of the currency a complete explanation of the rise ; while, conversely, those engaged in the manufacture and distribution of commodities find a complete explanation in a large group of causes relating to production, such as the quasi-monopoly of producers, the intensity of the demand of the home and foreign Governments, the great rise in freights, increased costs of production (including abnormal depreciation of plant, increased standing charges through shortage and irregularity of labour, increase in the real cost of labour, increased risk of capital employed),

and increased taxation. Nor are the popular interpretations of Economic doctrine really helpful, since the present period, as regards general prices, is to some extent abnormal; and the generally accepted theory of money requires to be applied with special care in the existing somewhat exceptional circumstances. The present time, as regards prices, constitutes a "short period" which is subject to exceptional influences, and discussion of general prices during such a period presents peculiar difficulties.

At any time, the amount of the variation in prices generally is not easy to calculate. At present, there are additional hindrances to attaining a reasonably satisfactory calculus of the increase. The following tables give the index numbers of the *Statist* and the *Economist* for the prices of wholesale commodities—

INDEX NUMBERS OF THE *STATIST* AND *ECONOMIST*

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
<b>1913—</b>												
<i>Statist</i>	86·4	86·1	86·7	86·2	85·7	84·1	84·2	85·0	85·7	84·5	83·3	83·8
<i>Economist</i>	124·1	123·4	123·4	124·0	122·4	121·3	122·2	122·1	123·3	122·1	120·7	119·2
<b>1914—</b>												
<i>Statist</i>	83·5	83·8	82·8	82·3	82·3	81·2	82·4	87·9	89·3	89·8	88·8	91·6
<i>Economist</i>	119·0	118·9	118·0	117·5	118·0	115·9	116·6	122·6	126·4	124·2	125·5	127·3
<b>1915—</b>												
<i>Statist</i>	96·4	100·9	103·7	105·9	107·2	106·4	106·4	107·0	107·8	110·0	113·1	118·4
<i>Economist</i>	130·5	142·3	150·2	151·2	151·2	147·7	149·1	149·8	151·6	153·2	159·1	165·1
<b>1916—</b>												
<i>Statist</i>	123·6	127·0	130·4	134·2	135·4	130·8						
<i>Economist</i>	174·5	182·2	182·4	190·5	199·0	191·5	191·1					

These figures show a fall in wholesale prices from April, 1913, to June, 1914, and thereafter, until May, 1916, a rise, which, comparing July, 1914, with March, 1916, represents an advance of between 58 and 59 per cent. The *Labour Gazette* returns of the retail prices of food (weighted as regards the relative importance in working-class expenditure) show that such retail prices have risen less than wholesale, the increase—also in March—being 48 per cent. for the United Kingdom. On 1st June the figure was 59 per cent. Rising prices have been a common phenomenon in the belligerent and adjacent countries. In Berlin, according to the *Statistische Korrespondenz*, the increase in food prices from July, 1914, to March, 1916, was 100·5 per cent., though in several cases these were maxima prices. In France, according to the particulars with which Professor Gide has favoured us (p. 251), the rise in prices up to April, since the beginning of the war, was 35 per cent. In Russia, the prices of the commodities—wheat,

rye, meat, butter and sugar—show at the end of 1915 a rise, as compared with 1913 of 65 per cent., or as compared with 1914 of 50 per cent. (*Economist*, 6th May, 1916). In the United States, on the contrary, prices for some time rose only to a small extent. In September, 1913, the highest point of that year was reached, the index number being 103. In 1914 the highest point was again in September, the index being 104; while in September, 1915, it relapsed to the figure of 1913, namely, 103. By December, 1915, and January, 1916, there was a rise of 5 per cent. on the index number of September, 1915. (*Bulletin of the U.S. Bureau of Labour Statistics, Wholesale Prices Series*, No. 4. *Monthly Review*, Feb.-April, 1916.) The New York *Annalist* enables the movement to be continued to the end of 1915. Its index number was 142 in June, 1914; it rose to 161 in September, 1914; and fell to 136 in September, 1915, whence it rose to 149 in December; thus showing an advance of 5 per cent. from June, 1914, to December, 1915. It is significant that in the same period the rise in the *Statist's* Index Number for the United Kingdom was 42 per cent. In 1916 prices in the United States have shown a disposition to rise very considerably. Thus, Dun's index number was 124.5 on 1st January, 1914; 119.7 on 1st July, 1914; 124.1 on 1st January, 1915; 124.9 on 1st July, 1915; 137.7 on 1st January, 1916, and 145.7 on 1st April, 1916; or an increase of 21.7 per cent. since the beginning of the war.

In normal circumstances, subject to conditions as to averaging and weighting (which were investigated in detail by a Research Committee of this Section from 1887 to 1890), a well-constructed index number affords a fairly close approximation to a change in the level of general prices; but there are certain exceptional phenomena at the present time which call for discussion before accepting the rise in prices as shown by the index numbers between July, 1914, and the Spring of 1916 as typical of the movement of prices as a whole. The articles which are to be taken account of are presumably not limited to commodities ready for consumption (which for some purposes may be the only proper constituents of an index number) but, rather, include all or most things which are objects of exchange; and, while such prices would not enter into an index number for many purposes, from the standpoint of the present inquiry, the absence of data must be noted. At present,

however, there are large classes of exchanges which are only represented imperfectly by the best available index numbers. For instance, immense purchases are being made by the Ministry of Munitions, and there are no data available as to the prices; nor, even if such data were available, would they be easily comparable with pre-war prices. Again, rents and the sale price of property have not risen, but have rather fallen. For instance, the index number of the *Labour Gazette* showed an increase since the beginning of the war up to March, 1916, of 48 per cent. in the price of food consumed by working-class families. But, according to a statement made in Parliament by Mr. Pretyman, if prices of clothes and outlay on rent be included in the usual proportions, the rise is reduced from 48 per cent. to 33 per cent. Then, wages and salaries, on the whole as yet, have not risen in proportion to prices (cf. *Board of Trade Labour Gazette*). Also, even though the restrictions on Stock Exchange dealings have reduced the purchases of stocks, there has been a considerable fall in price of Stock Exchange securities, as is shown by the index number compiled on the basis of the records of representative securities of the *Bankers' Magazine*. Thus the index for 1913 was 90; that for 1914, 86; and for 1915, 78. In the absence of data concerning munitions, any weighting of the remaining items would be difficult, if not almost impossible. There are, however, the alternative corrections of the index numbers of commodities, namely, if the prices of munitions are representative of recorded prices of commodities, then a deduction from the rise shown by the index numbers is to be made to allow for the less rise or for the fall of the other prices. If the prices of munitions are higher than the general index of commodities, how far, then, is this extra rise neutralised by the smaller rise or by the fall in wages, rent, and securities in proportion to the respective quantities? Thus the general level of prices may be either lower or higher than that indicated by index numbers such as those of the *Economist* and of the *Statist*.

The effect of a great war upon prices has been frequently discussed, notably by Ricardo, Tooke, and others. To some extent, the main causes of the movement can be exposed, though, at the present stage, the exact degree of influence of each cause can only be conjectured. On the one side there is the total quantity of money in circulation in relation to its rapidity of circulation divided

by the quantity of goods and services to be exchanged, and the result must be the general level of prices. Money again is, broadly, of two kinds for the purposes of this calculation. There is, first, legal tender, consisting of gold or representatives of gold; and there is, secondly, "bankers' money" in the form of cheques. In normal circumstances, owing to the gold basis of the British banking system, these two usually tend to vary together. Thus, when trade is normal, an increase in the circulation of cheques indicates an increase in legal tender and conversely; but, as pointed out by Professor Irving Fisher, in a period of rising prices, banking deposits usually increase faster than the previous proportion between these and the amount of legal tender in circulation (*Purchasing Power of Money*, p. 61). In Part II of this Report, attention has been drawn to the increase in the deposits in banks since the outbreak of war. In 1913 the increase in deposits amongst banks (excluding the Bank of England) was £46,000,000, or 4·7 per cent. From 31st December, 1913, to 31st December, 1915, the increase was more than £200,000,000; while the total deposits at the later date were £1,243,000,000, or an increase of 20 per cent. The difficulties in forming a well-founded opinion upon the increase in the amount of legal tender and token currency have been dealt with in Part III. Here the increase has been considerable, though when full weight is given to the withdrawal of gold from circulation and also to the amount of gold, currency notes, and currency note certificates held by bankers (which, in so far as they represent augmented reserves against the increased deposits, have already been taken into account), the net increase of currency actually in circulation in June, 1916, amongst the public may well be less than would be expected from an inspection of the currency notes account and other returns.

There is, next, the rapidity of circulation of money. Rising prices and active trade usually have the effect of increasing the rapidity of circulation. But under present conditions there are adverse circumstances to be encountered which would, at least, arrest the tendency towards increased rapidity, and might, as a net result, leave it slower than before the war. Pressure upon the railways, congestion at the docks, postal delays, scarcity of labour, less efficient labour in many industries, and Governmental restrictions on the movement of goods, all operate in restricting business

and, consequently, are likely to reduce the rapidity of the circulation of money, particularly of cheques, as is shown by the returns of the Clearing House, though in this connection it must be noted that much of the decrease in London clearings is connected with the reduction in Stock Exchange transactions. If there is a reduction of the rapidity of circulation, the influence would be *pro tanto* towards mitigating the rise in prices brought about by the factors previously detailed. On the whole, monetary conditions in themselves would not account for the total rise in prices. Professor Chapman estimates their influence at rather more than half of the total rise (*Journal Institute of Bankers*, XXXVII, p. 52). For the rest of the explanation, we have to seek data from the quantity of things to be exchanged. Indeed, it is in this direction that popular opinion seeks and finds the complete cause of the phenomenon. This is doubtless due to the fact that difficulties or delays in obtaining many goods face many consumers and most producers; and so it is not unnatural to lay stress upon the phenomenon which forces itself upon one's attention, rather than upon the related condition which operates far from the gaze of the general public. The statements which have been made in Parliament from time to time in relation to recruiting and the supply of men for the Forces, afford some indication of the number withdrawn from industry. Against this has to be set the replacement of labour, through the employment of women and of men previously under-employed—also allowance has to be made for overtime worked—so that, as regards numbers, a very considerable part of the blank has been filled. Still, various indications point to the total number of persons employed in industry in the Spring of 1916 being less than before the war. Further, what is vital is not so much the quantity of labour as its quality. The training of the new workers (chiefly women and young persons) has lagged behind the demand for their services. Therefore, during the first half of 1916 the efficiency of the new workers in the aggregate was lower than that of an equal number whom they replaced. To some extent, invention of improved machines and the relaxation of trade union restrictions may have been a counteracting influence, but its effect can only have been partial in the case of a comparatively small number of important trades. Thus, on the whole, the output of labour during the first six months of 1916

will have been markedly less than two years ago, and so there will have been a scarcity of commodities produced as compared with the earlier period.

It may, however, be urged that the deficiency in home production has been made good by increased imports. Since the war, statistics of foreign trade are not exactly comparable with those before that period. Until the end of 1915, Government supplies and stores shipped directly in Government vessels are not counted as imports or exports. From January, 1916, Government imports of food are included in the Board of Trade Returns. Thus there is an unknown amount of goods to be added to the declared imports. But the real movement is to some extent disguised by the citation of values, whereas these reflect the influence of higher prices (including the great increase of freights and the rise in insurance); while what is required is a comparison in quantities. The following table gives a comparison of quantities of some of the more important imports during 1913 and 1915.

QUANTITIES OF CERTAIN IMPORTS IN 1913 AND 1915

	1913.	1915.	
<i>Food—</i>			
Grain and Flour . . . . .	105.9	103.9	
Beef. . . . .	9.2	8.6	
Mutton . . . . .	5.3	4.7	
Bacon . . . . .	4.9	6.5	
			million cwts.
<i>Dutiable—</i>			
Raw Cocoa . . . . .	78.3	187.1	
Tea . . . . .	365.0	317.3	
Tobacco . . . . .	166.0	205.9	
			lbs
<i>Raw Materials: Textiles—</i>			
Sheep or Lambs' Wool	800.6	926.7	" "
Cotton . . . . .	21.7	26.5	
			centals
Paper-making Utensils . . . .	1.2	1.1	
Iron and Steel Manufactures . .	2.2	1.2	
			tons

The reduction in the civilian population at home and action by the Government in restricting some imports and prohibiting others during 1916 are likely, together with economy in consumption, further to reduce the quantity imported; so that even when ample allowance is made for undeclared Governmental imports, it is clear that the increase in the whole volume of imports of all kinds is not likely to be sufficient to compensate for the decrease in

production at home. It follows, therefore, that, when allowance is made for the decrease of exports (again taking account of exports upon behalf of the Government), there is, upon the whole, a marked decrease in the amount of goods to be exchanged, and that this decrease explains the remainder of the rise in prices. In fact, the quantity of money has increased, the quantity of goods has decreased; and, therefore, a rise in prices has been the necessary consequence. In fact, it may well be that, had there not been a slight decrease in the rapidity of circulation, the level of general prices would have been higher.

Turning now from the consideration of prices in general to the prices of particular commodities, but still keeping within the limits of the short period since the beginning of hostilities, there are all the disturbances which a state of war involves and which fall on individual commodities with varying incidence. The general advance has to be distributed over an immense number of commodities and services; and the proportion of that advance which any particular article will bear, in the relation of its quantity to that of all commodities, is determined by causes peculiar to itself. If it rises more than the average, less of the general advance remains to be distributed over other commodities in proportion to their respective volumes, and conversely. Obviously, when a commodity was imported exclusively from a source now closed, a new production of it is likely to be exceedingly dear, or alternatively, its substitutes increase in price; while as long as the stock, accumulated before the war, lasts, it will sell at higher and higher prices (as may be seen in the case of certain German drugs and dyes). Again, commodities which have been subjected to augmented war taxation respond by an equivalent or even greater advance in price. Again, changes in the distribution of income amongst different classes affect the prices of those commodities for which there is a demand from one of these classes and not from another. For instance, where well-paid munition workers buy goods, which were not previously demanded by the middle class, the price of such goods, apart from other causes, will tend to increase even more than in proportion to the general rise. On the other hand, where there was a demand exclusively or mainly from people with fixed incomes, whose purchasing power is affected both by increased taxation and by the rise in price of necessities, then,

other things being equal, the price of that commodity will increase less than the average, or may even fall, unless the producers of it can discover a new demand. It might be supposed that the rise in freights and marine insurance should be added, more particularly in view of the very great advance in the former. The following are some increases in freight between 1914 and April, 1916—

	1914.	1915.	1916.
Alexandria to London or Hull	6/6	—	55/-
Australia to United Kingdom .	21/3	—	110/-
Bombay "	11/-	57/-	112/6
River Plate "	12/6	72/6	165/-
United States "	29/3 (cotton)	150/-	325/-
" " "	1/9 (grain)	9/6	14/6

Between April and June there was a considerable reaction in freights.

But the effect of this cause has already been taken into account in estimating the general reduction in the volume of goods exchanged. Imports and exports might be compared to a pouring of liquid from two different bottles, and an increase in freight and insurance has an effect similar to a contraction in the neck of the bottles, thereby lessening the flow. In one respect, however, the rise in freights has an effect on the prices of commodities, namely, in so far as there is a home-produced commodity of the same kind as (or a substitute for) that imported. The increased hindrances in reaching our markets act like an import duty in favour of the home producer, and the price of his commodity rises to the new level assumed by the imported commodity.

What will be the course of prices after the war? Here the inquiry enters upon a new phase, which may take two forms—according to whether the period considered is another short one covering the time in which industry is endeavouring to adjust itself to a new equilibrium; or again a much longer period, say, a quarter of century, during which it is to be hoped and anticipated that much of the disturbance will have been overcome.

In this country, authorities are somewhat chary of expressing an opinion; the balance of their views is that, in the period immediately after the war, there will be a fall in general prices, but that that fall will not restore the pre-war level. Professor Supino holds that there will be a brief crisis followed by a long period of depression, the latter being caused by the scarcity of circulating

capital. Professor Gide has provided a careful estimate of the probable course of prices in France and Belgium (p. 252). In these countries, high prices are likely to continue for a protracted period, due, on the one side, to scarcity of raw materials, and, on the other, to the period which is likely to elapse before the retirement of paper money, which, he calculates, may be fifteen or twenty years after the declaration of peace.

Mr. Joseph Kitchin has made a detailed and exhaustive study of gold production, prices, bankers' returns, wages, the Bank rate, and the yield on Consols during the last hundred years (p. 253), and he has reached the conclusion, based on statistical data, that the stock of gold money per head is the determining condition of general prices over long periods. From the gold production, the quantity of gold used as money can be calculated; and the former is, to a very large extent, free (or has been hitherto free) from the disturbance of war, since it takes place in new countries. In 1912 the world's gold production was 97.4 million pounds, it was 96.9 million pounds in 1915, and Mr. Kitchin estimates it may reach £100,000,000 in 1917. Thereafter, he anticipates a gradual fall, possibly of about £1,000,000 per annum. After 1917, his calculation proceeds, the deduction to be made for industrial purposes and through other causes will average £40,000,000 a year, so that the aggregate stock, on this basis, would be £2,050,000,000 in 1920, being 22s. 6d. per head, reaching £2,570,000,000 in 1930, or 26s. 1d. per head. Existing prices have been forced artificially above the figure warranted by the gold line, and a reaction after peace is to be expected. But, owing to the increase in the stock of gold per head, that reaction will leave prices after the war higher than they were before. On the basis of Mr. Kitchin's data, the *Statist's* index number would assume the following form: 1896, 61; 1913, 85; 1916, 135 (estimated); 1930, 115 (estimated). Taking the index number of 1913 as 100, the following results are reached—

	1913.	1916.	1930.
Estimated Index Numbers .	100	159	135

This gives Mr. Kitchin's final conclusion that in 1916 prices will advance by 59 per cent. as compared with 1913, and that by 1930 41 per cent. of that advance would be lost.

ESTIMATE OF THE AMOUNTS OF GOLD AND SILVER IN THE  
POSSESSION OF THE PUBLIC BEFORE THE WAR

BY MR. A. H. GIBSON

A. *Liberal estimate of amount of gold and silver in the pockets and homes of the public before the war (exclusive of that in tills and safes of shops, etc.)*—

Amount of Gold per family.	IN MILLIONS : APPROXIMATE.		
	Number of Families.	Total amount of Gold held.	Total amount of Silver held.
None . . . . .			
10 0	0.50	£	£
£1 0 0	1.00	0.50	
£1 10 0	2.00	2.00	
£2 0 0	2.00	3.00	
£2 10 0	1.50	3.00	
£2 10 0	1.00	2.50	6.00
£3 0 0	0.50	1.50	
	—	—	—
	8.50	12.50	6.00
£3 10 0	0.25	1.00	
£4 0 0			
£4 10 0	0.50	2.25	
£5 0 0			
Between £5 and £10	0.50	3.75	1.50
Above £10	0.25	5.00	
Hoarded	—	5.50	0.50
	—	—	—
	10.00	30.00	8.00
	—	—	—

B. *Liberal estimate of amount of gold and silver in the tills and safes of shops, mills, warehouses, hotels, public-houses, farmhouses, lodging-houses, hospitals, schools, railway offices, post offices, and various other classes of offices*—

But Exceed- ing.	Not Exceed- ing.	IN MILLIONS : APPROXIMATE.		
		Number of Shops, etc.	Total amount of Gold held.	Total amount of Silver held.
£ 2	£ 2	0.125	£ 0.20	£
£ 2	£ 3	0.150	0.40	
£ 3	£ 5	0.200	0.80	
£ 5	£ 10	0.350	2.60	
£ 10	£ 20	0.250	3.50	
£ 20	£ 50	0.150	5.00	
£ 50		0.075	7.50	
		—	—	—
		1.300	£20.00	£7.00
		—	—	—

The writer is strongly of the opinion that the tables given overestimate rather than underestimate the true amount of gold in circulation prior to the war.

In connection with the tables, it may be noted that there was, prior to the war, just over 10,000,000 families in the United Kingdom and about 1,300,000 shops, mills, warehouses, hotels, etc., as per above heading. Even mills, warehouses, offices, usually kept a small amount of gold in the form of petty cash, and have to be taken into consideration in an estimate of gold circulation.

### ISSUES OF PAPER MONEY IN FRANCE, AND PRICES

BY PROFESSOR CHARLES GIDE

*(Translation)*

Is there any reason to think that the issue of currency notes has caused any inflation in commodity prices? What has happened in France seems at first sight to justify an answer in the negative. What is the position? Of all the belligerent countries, France has made the largest issue of bank notes. At the time of writing (10th April, 1916) that issue exceeds 15 milliards francs, and probably the legal limit (which has recently been increased from 15 to 18 milliards) will soon be reached. This is an amount almost equal to that of the Bank of Russia, but much greater than that of the Bank of England or even than that of the Bank of Germany.

If, however, the question propounded is answered in the affirmative, should it not be inferred that prices ought to be higher in France than in all the other countries? But, on the contrary, that rise is least in France, where, at the time of writing, the increase is 35 per cent.; while it is 50 per cent. in England and 100 per cent. in Germany.

Must one, then, reply that the issue of notes does not exercise any influence upon prices? Such an answer does not appear justified. One can, in fact, assign reasons why, in the case of France, the great issue of notes only acts slightly upon prices.

1. It can be proved that only a part of the 15 milliards of notes is in circulation: a great part is hoarded, and, therefore, does not act on prices. Why has there been a great hoarding of notes? The reason is that many who held them have been frightened by the moratorium of April, 1915 (which has been renewed and

prolonged since then), and keep them to meet their taxes. Those who have notes retain them, fearing that, if they deposited them in a bank, they might not be able to withdraw them.

2. Further sales on credit of goods are reduced, and again the cheque is little used in France (and now less than ever). Thus France has need of a great quantity of notes for its daily payments. At present, these payments are numerous owing to the millions paid each week to soldiers, officers, and the wives of soldiers.

It is easy to make a calculation. On the eve of war, the following was the amount of money in circulation in France—

- (1) About 6 milliards of gold.
- (2) About 6 milliards of notes—a total of 12 milliards.

At present, the gold has altogether disappeared. There are only notes; but if one supposes that 3 milliards of the 15 milliards are hoarded, the *quantity* of money in *circulation* is not greater than before the war. That is the reason it does not exert an influence on prices—there is no inflation.

Perhaps one might think that the reality of a depreciation of the notes is fully proved by the depreciation of the foreign exchanges, since the French note has lost 12 per cent. to 15 per cent. on the Exchanges of London, New York, Geneva, etc. But I believe the fall in the Exchange is due to the balance of trade and not to depreciation of the currency. The same applies to German currency, but to a greater extent—though German issues of notes have been much more restricted than those of French notes. But if the quantity of notes issued in France continues to increase, and if it reaches the legal limit of 18 milliards and even passes that limit, there would then be occasion to inquire whether that increase in the circulation would be accompanied by a great increase in prices; and I should be greatly surprised if this would not take place.

#### PRICES AFTER THE WAR

BY PROFESSOR CHARLES GIDE (PARIS)  
(*Translation*)

I believe that high prices will continue for a long time, because both the natural cause (scarcity) and the artificial cause (inflation) will be prolonged for a considerable time after the war equally in France and in Belgium.

1. The scarcity of raw materials and of products will be terrible after the war as a result of the unproductive consumption and of the actual destruction of both classes of commodities. In the department of the Nord in France, everything will have to be re-established, and importation from abroad will be as difficult as production at home.

2. The mass of paper money in circulation, which will not stop growing so long as the war lasts, cannot be reduced, except very gently, to the normal level—such a level, I mean, that its retirement will again become possible. After the war of 1870–1871 the forced currency in France lasted for seven years: is it not inevitable that after a war such as this the forced currency will last at least fifteen or twenty years?

Besides, the Bank of France will not be able to resume cash payments until the State shall have repaid the milliards which it has borrowed from the Bank (7 milliards of francs at this date, April, 1916); but who knows how far it is to the end of the war?

Moreover, the State, which will have to issue enormous funding loans (perhaps 30 or 40 milliards of francs), will not proceed to increase them still further by the sums necessary to repay the Bank. It will postpone the repayment as long as possible.

The high prices, however, will be advantageous as far as they help to start business again, and to increase profits and earnings.

#### ECONOMIC CONDITIONS AFTER THE WAR

By JOSEPH KITCHIN

Taking the stock of gold money in the world to increase yearly by the annual gold production after deducting the absorption of India and Egypt, and also the industrial consumption of Europe and America (basing the figures for the latter on Dr. Soetbeer for 1851–80, and on the United States Mint estimates for 1890 to date), we find that it has increased as follows—

	Aggregate Stock. £	World's population.	Per head. s. d.
1818 . .	190,000,000	770,000,000	5 0
1848 . .	210,000,000	995,000,000	4 3
1873 . .	585,000,000	1,225,000,000	9 7
1890 . .	720,000,000	1,425,000,000	10 1
1913 . .	1,595,000,000	1,720,000,000	18 6

The figure at the end of 1915 was £1,730,000,000, or 19s. 9d. per head, so that the amount per head has almost doubled and the aggregate more than doubled since 1890. 1848 was the year of the Californian alluvial discoveries, and 1890 four years after the discovery of the Rand gold fields. After each of these discoveries the gold money of the world increased strongly, while between 1873 and 1890 the advance was negligible.

If one plots on a chart the London Bankers' Clearing House Returns, our Foreign Trade, Taxpayers' Incomes, National Wealth, and Money Wages—reckoned per head of the population of the United Kingdom—and proceeds to smooth out the curves by eliminating the temporary or trade cycles fluctuations, one gets in each case a curve which is very largely a repetition of the curve of the stock of gold money per head, indicating that that stock (which has increasingly become an index of money of all kinds, including credit) is the fundamental factor for the general movements of the other factors, which are all based on values in terms of gold.

The matter is exemplified by the figures given on next page for four periods—alternately of stationary and rising stocks of gold money. The years chosen are mainly those of maxima and minima in the six last factors named below; and so the movements, whether up or down, are somewhat exaggerated.

It will be readily seen that the six last factors either rise very moderately or actually fall in the first and third periods, when the stock of gold money per head was not advancing appreciably; and that they all rise strongly in the second and fourth periods, when there is a strong rise in the gold stock. It is, therefore, claimed that if one can forecast the behaviour of the future gold stock, one can also forecast to a large extent the movements in the other factors.

Gold production is peculiarly free from disturbance by war—the exception being the Boer War of 1899–1902—by reason of the fact that it takes place almost entirely out of Europe and in the newer countries. Since the record year 1912, when £97,400,000 was produced, the figures have been £95,000,000, £93,500,000, and £96,900,000 for 1913, 1914, and 1915; and the current year should show £99,000,000, and 1917 perhaps £100,000,000. So far as can be seen, there will thereafter be a very gradual fall, possibly of £1,000,000 per annum. The future gold production contains

Aggregate Stock of Gold Money per head . . .	1818-1848 60d.-51d. Fall 0·3d. p.a. " 0·5% "	1848-1873 51d.-115d. Rise 2·6d. p.a. " 5·0% "	1873-1890 115d.-121d. Rise 0·4a. p.a. " 0·3% "	1890-1913 121d.-22d. Rise 4·4d. p.a. " 3·6% "
London Bankers' Clearing House Returns per head . . .	1817-1848 £44-£55 Rise £0·4 p.a. " 0·8% "	1848-1873 £55-£187 Rise £5·3 p.a. " 9·6% "	1873-1894 £187-£162 Fall £1·2 p.a. " 0·6% "	1894-1913 £162-£359 Rise £10·4 p.a. " 6·4% "
U.K. Foreign Trade per head . . .	1819-1848 £3·2-£5·2 Rise 1/6 p.a. " 2·2% "	1848-1873 £5·2-£21·0 Rise 12/6 p.a. " 12·2% "	1873-1894 £21·0-£17·4 Fall 3/6 p.a. " 0·8% "	1894-1913 £17·4-£30·3 Rise 13/6 p.a. " 3·9% "
U.K. Taxpayers' Incomes per head . . .	1814-1854 £8·0-£10·9 Rise 1/6 p.a. " 0·9% "	1854-1873 £10·9-£17·6 Rise 7/7 p.a. " 3·2% "	1873-1895 £17·6-£17·7 Rise nil p.a. " " "	1895-1913 £17·7-£27·0 Rise 10/3 p.a. " 2·9% "
U.K. Money Wages (1900-100) . . .	1820-1850 60-56 Fall 0·1 p.a. " 0·2% "	1850-1873 56-87 Rise 1·3 p.a. " 2·4% "	1873-1895 87-89·5 Rise 0·1 p.a. " 0·1% "	1895-1913 89·5-106·5 Rise 0·9 p.a. " 1·1% "
Prices of Commodities (Sauerbeck) . . .	1818-1849 142-74 Fall 2·2 p.a. " 1·5% "	1849-1873 74-111 Rise 1·5 p.a. " 2·1% "	1873-1896 111-61 Fall 2·2 p.a. " 2·0% "	1896-1913 61-85 Rise 1·4 p.a. " 2·3% "
Yield on Consols (per cent.) . . .	1820-1852 4·42-3·03 Fall 0·4 p.a. " 1·0% "	1852-1866 3·03-3·42 Rise 0·3 p.a. " 0·9% "	1866-1897 3·42-2·45 Fall 0·3 p.a. " 0·9% "	1897-1913 2·45-3·41 Rise 0·6 p.a. " 2·4% "

comparatively little room for surprises, assuming there are no wars in the mining countries. If surprises come, they will probably be in the form of new discoveries, which, if they occur, would only strengthen the argument of the present note.

The estimated consumption of gold for industrial purposes has of recent years been about £25,000,000 per annum; while for 1910, 1911, and 1912 the absorption of India and Egypt reached the exceptional figures of £24,300,000, £27,600,000, and £29,400,000, falling to £17,200,000 in 1913, and probably to £8,400,000 and £5,600,000 in 1914 and 1915. Taking the combined requirements for industry, India and Egypt as £20,000,000 for 1916, £30,000,000 for 1917, and £40,000,000 per annum thereafter, and the annual gold production at the figures already indicated, the stock of gold money down to 1930 may be put as follows—

	Aggregate Stock.	World's population.	Per head.
1915 . . .	£1,730,000,000	1,750,000,000	s. d. 19 9
1920 . . .	2,050,000,000	1,825,000,000	22 6
1925 . . .	2,320,000,000	1,900,000,000	24 5
1930 . . .	2,570,000,000	1,975,000,000	26 1

The prospect, therefore, is that there will be a further important advance, though tapering off somewhat with time.

There seems little doubt, therefore, that, apart from the present war, the rise in economic factors which has persisted since 1893-97 would have continued for many years to come (*i.e.*, that they would ordinarily have followed the gold line closely), subject, of course, to trade cycle fluctuations. The war has come in as a disturbing factor, with the result that the factors—particularly commodity prices, incomes, and wages—have been forced up far more than the gold line warrants. That they will further appreciate during the continuance of the war must follow as the night the day; and that the greater the rise during the war, the greater will be the reaction when peace comes again is almost equally certain.

But there is this difference between the probable position after this war and the position after the Napoleonic Wars—the last fitting example we have, though conditions then were on a far smaller scale. A century ago the fundamental gold line was horizontal or even falling, and the resulting depression and misery were not finally dissipated until the Californian and Australian gold fields were discovered. The basis for quickly throwing off the effect of the wars was, therefore, then absent, and there was a gold famine. Now, however, the fundamental gold line is rising and will continue to rise strongly for many years to come; and we have, therefore, to expect that the after-war dislocation will be limited in time and amount as compared with what would have been the case if the gold line were not advancing. Moreover, because of the influence of this increasing stock of gold money, the after-war level is likely to be higher than before the war (*i.e.*, when the war dislocation is at an end and matters have subsided to the normal, they should follow the rising gold line).

This note does not deal with anything but the gold values of the factors named, and, therefore, does not go into the question of volume of trade, real wages, the burden of taxation, etc., which will doubtless have a marked effect upon conditions after the war, and probably especially upon savings.

#### V.—FOREIGN EXCHANGES

The movements of the Exchanges since July, 1915, fall naturally into three groups, namely, those of the Allied countries, those of

enemy countries, and those of neutral countries. During that period, Sterling Exchange has been at a premium over gold point in all allied countries, while it has been below or at gold point in neutral countries. Before proceeding further, the term "gold point" needs to be defined according to present conditions. For some years before the war the expenses of sending gold to correct the Exchange varied within exceedingly narrow limits. Since the war, both freight and insurance have increased; and, in addition, either may change very greatly from day to day. For instance, on one day in May the insurance on gold to Holland doubled as compared with the rate of the previous day. Mr. E. L. Franklin has given us particulars of the additional charges for freight and insurance of gold upon 17th May, 1916—France,  $1\frac{1}{8}$  per cent.; Holland, 3 per cent.; Italy,  $1\frac{1}{4}$  per cent.; Russia, 4 per cent. to 5 per cent.; Spain, 2 per cent.; Switzerland, 1 per cent. Thus there is what may be described as a "war gold point," which is lower than that of 1913 by the above figures for the respective countries; and it is only when the Exchange falls below this point that it could be corrected by gold exports.

The movements of Sterling Exchange between July, 1915, and April-May, 1916, may be observed from the statements given on next page.

As regards silver exchange, the rates have been characterised by Mr. W. F. Spalding as following the price of silver on the London market at a more or less respectful distance. In July, 1915, the average rate between Shanghai and London was 2s.  $2\frac{5}{8}$ d. per tael, while between Hong-Kong and London the price was 1s.  $9\frac{1}{2}$ d. per \$. Towards the end of November there was a sharp rise in the price of silver on the London market which caused the Hong-Kong rate to advance to 1s.  $11\frac{1}{2}$ d. and the Shanghai rate to 2s.  $7\frac{5}{8}$ d. The further rise in silver early in 1916 was followed by a sympathetic rise in Eastern Exchange rates, and Hong-Kong was quoted at 2s.  $0\frac{1}{2}$ d. and Shanghai at 2s.  $9\frac{1}{2}$ d.

The more significant movements of the leading Exchanges conform to certain broad principles; but, as to details, there are interesting special causes affecting most of the countries whose external indebtedness has to be considered. In the first place, in the allied group of countries the effect of the war has been to augment, by importation from abroad, the home supply of

RATES OF EXCHANGE IMMEDIATELY BEFORE THE WAR, AND THE HIGHEST AND LOWEST QUOTATIONS (BASED UPON ACTUAL TRANSACTIONS) BETWEEN JULY, 1915, AND JUNE, 1916.

Country or Place.	Rate immedi- ately before the War.	Quotations:		Quotations:	
		Date.	Lowest.	Date.	Highest.
New York . . .	4.88½	1 Sept. '15	4.52	19 Jan. '16	4.77¼
Holland . . .	12.14	7 Jan. '16	10.46	July, '15	11.95
Scandinavia . . .	18.25	10 May, '16	15.15	31 " '15	18.30
Spain . . .	26.15	5 " '16	22.75	1 " '15	25.97
Switzerland . . .	25.18	14 Apr. '16	24.66	1 " '15	25.90
Paris . . .	25.18	19 July, '15	26.40	14 Apr., '16	29.03
Italy . . .	25.30	14 " '15	29.20	5 Feb., '16	32.30
Petrograd . . .	96.10	1 " '15	128.	4 Jan., '16	164.

RATES OF EXCHANGE, AS EXPRESSED IN NEW YORK CURRENCY, AS AT 15TH JULY, 1915, AND 12TH MAY, 1916.

Currency.	1f	then original rate was—	and if rate on 12th May, 1916, was	percent- age of dis. or pm. is
Sterling . . .	4.77 = -2½%	4.87½	4.76 1½	-2½%
Reichsmarks . . .	82 = -11½%	92½	77 3½	-15½%
France . . .	5.62 = -7 3½%	5.21½ or 19.17	5.93½ = 16.85 cts. per franc. cts. per franc.	-12 3½%
Austrian Crowns	15 1½ = -25 1½%	20 ½	13 ½	-33 ½%
Lire . . .	6.11 = -15 1½%	5.30 = 18.86 cts. per lire.	6.32 = 15.82 cts. per lire.	-16 1½%
Roubles . . .	31.75 = -38%	51.21	30.70	-40%
Scandinavian Crowns	26.19 = -2%	26.72	31.15	+ 16½%
Dutch Guilders	40 ½ = —	40 ½	41 ½	+ 3 ½%
Pesetas . . .	19.10 = -1%	19.29	19.60	+ 1 ½%

commodities required for their forces. Accordingly, there is, so far, an addition to their respective imports. In France, the occupation of an important industrial district by the enemy has made it necessary to import other commodities. Again, both France and Italy have lost, for the time being, the important "invisible export" occasioned by the expenditure of travellers. It is interesting to note that Professor Gide anticipates that this present loss will be more than compensated in the future when Verdun, the towns of the Marne and the Meuse, as well, no doubt, as other battlefields further to the east, yet unknown, "will become places

of pilgrimage for foreigners, and especially American tourists" (p. 267). At the same time, under this head, France should experience compensation from the disbursements of the British troops serving in that country. Italy suffers a further loss, as regards its balance of international indebtedness, in the cessation of remittances to their families at home by Italian emigrants; and the loss under both heads is estimated by Professor Einaudi at 1,000,000,000 to 1,200,000,000 lire a year (p. 268). With the exception of Great Britain, the situation is not relieved by the export of gold, and an increase in exports is difficult in the circumstances owing to the demands of the war upon the productive forces of these countries. To some extent, relief may be found in a reduction of the amount of the pre-war imports; but the returns of foreign trade show the growth of an unfavourable balance. For instance, taking the foreign trade returns of the United States with Great Britain, France, Russia, and Italy, the following results are shown in 1915—

TRADE OF THE UNITED STATES WITH GREAT BRITAIN, FRANCE, RUSSIA, AND ITALY IN 1915.

Country.	1913.			1915.			Increase in 1915 as com- pared with 1913.
	Imports.		Exports.	Imports.		Exports.	
	In mil	lion \$.	Excess of Exports from U.S.A.	In mil	lion \$.	Excess of Exports from U.S.A.	
Gt.Britain	271.955	590.732	328.777	258.296	1191.596	933.273	604.496
France .	138.933	153.922	14.989	77.918	499.944	422.026	407.037
Russia .	22.322	25.965	3.643	2.433	124.633	122.230	118.587
Italy .	55.322	78.675	23.353	58.559	270.668	219.109	195.756

It is interesting to notice that Sterling Exchange on New York remains the same at the end of April, 1916, as it was July, 1915, showing a discount of 2 per cent. upon par; but, under existing conditions, being in each case just at the point (or a shade above it) at which exports of gold could be made. In other words, the Exchange on New York keeps about the lower gold point as at present existing. But between these equilibria there have been somewhat violent oscillations. In July, 1915, the fluctuations (according to our table of actual transactions) were between 4.77½ and 4.76½. In August (on the 3rd) the rate was 4.76½, and it was only once higher during the month (4.76¾). The general tendency

was steadily downwards, particularly from the 26th to the 31st, as is shown by the following rates: on the 25th,  $4\cdot75\frac{1}{2}$ ; on the 26th,  $4\cdot64\frac{1}{2}$ ; on the 30th,  $4\cdot63\frac{1}{4}$ ; on the 31st,  $4\cdot59\frac{3}{4}$ ; while on 1st September the rate fell to 4·52, which was the lowest point recorded since the war. Measures were taken to deal with the situation. The Anglo-French loan of \$500,000,000 was floated on 15th October; and, in the quarter 1st October to 31st December, the withdrawals of gold from the Bank of England for the United States amounted to over £17,000,000. The combined effect of these measures was seen in the month from mid-September to mid-October, when the rate fluctuated between  $4\cdot72\frac{1}{2}$  and 4·68. On 25th October it had relapsed to 4·63; and, after a recovery to 4·65, fell to  $4\cdot62\frac{1}{2}$  on 1st November. The phenomenon of a country, with its currency upon a gold basis and with its exchange at a discount (as it was at this period), which exceeded the expenses of remitting gold to America, has excited a considerable amount of attention abroad. Professor Loria, in a very interesting communication which he has been good enough to send us, reasons that the natural tendency would be for the unfavourable trade balance to be liquidated by export of gold, but that this will not follow if "there is a sort of discredit attached to the operation which hinders gold from being exported." Elsewhere he speaks of "a moral prohibition of the export of gold," so that England has, in fact, "*a non-exportable gold standard*" (p. 269). It is always instructive to obtain a judicial opinion upon our financial operations from an authority abroad so competent and so well acquainted with conditions in this country. The problem which he raises cannot be dismissed by the prevalent City boast that London remains the one free gold market in Europe. Necessarily, export of gold must be subject to military exigencies where such arise. Apart from these, it is to be remembered that the British Empire produces nearly two-thirds of the world's output of gold, so that it has the control (independently of Exchange operations) of close on £60,000,000 of new gold every year. Since gold has been economised in internal circulation during the war period, a certain amount is liberated for export, besides eliminating the draft upon new gold formerly required for maintaining the currency. Therefore, in our special circumstances, apart from such gold as may be required for any increase in banking reserves or for augmenting the Currency Notes reserve, there is no good

reason for any moral or patriotic impediment to the most perfect freedom of gold export, always subject to the needs of the military situation. In a debate in the House of Commons on 13th December, 1915, there were some expressions which might seem to lend colour to the impressionist picture of a species of patriotic restraint of the exportation of gold. Thus allusion was made to the case of importers of foreign goods, who were not acting upon behalf of the Government, but, it was said, "would not allow gold to go out of the country." Or, as another speaker expressed it: "We all know that gold has been going very freely from this country. Many people have exported it very profitably. Many merchants have refrained from doing so for patriotic reasons" (*Parl. Debates*, lxxvi, pp. 1811, 1853). The Chancellor of the Exchequer summed up the position by saying that "export of gold is undesirable, but the freedom of the gold market is absolute" (*ibid.*, p. 1826). This is amply proved by the fact that the total withdrawals of gold for export reported by the Bank of England alone exceeded £70,000,000 during the nine months ending 31st March, 1916. In this respect, the situation has been summed up by the *Commercial and Financial Chronicle of New York*, on 1st July, 1916, in the following terms: "England's financial strength on the present occasion is manifest in a two-fold way. First, in the ability to provide the mass of gold and securities necessary in making payment for the tremendous foreign purchases which have been found necessary by the Entente Powers; and, secondly, in the way the enormous sums of money needed for the prosecution of the war are being raised. After the tremendous shipments of gold to the United States last year, another huge gold movement to this country is now under way, the importations since the beginning of May having aggregated over \$150,000,000." But, as regards the United States, there is still a wider question, which was primarily the adjusting of the Exchange. Of the possible methods of rectification, gold exports to the amount required was only one of several alternatives, amongst the others being a reduction of our adverse balance upon our trade with that country, the floating of a further loan there, and the sale of securities. Large exports of gold to America would have the effect of raising prices there, and in the present abnormal position this would mean paying more for goods required usually for military purposes; and, therefore, it would

follow that this way of adjusting the exchange would involve an unnecessary addition to the adverse trade balance, since we should, in fact, be putting prices up against ourselves. Another foreign loan at the end of 1915 did not appear feasible upon terms deemed reasonable, and thus there remained the two other alternatives. To increase exports or diminish imports, or both, required time, though this is the most satisfactory ultimate solution. Sale of securities, acceptable in New York, began in the autumn, and the effect soon showed itself in the rate of exchange, which rose from  $4\cdot62\frac{1}{2}$  on 1st November to  $4\cdot70\frac{1}{2}$  upon the 30th. But export of securities required to be organised, and this was undertaken by the Treasury under a scheme announced upon 17th and 21st December, according to which the Treasury was prepared to purchase selected dollar securities outright or to accept them upon loan, subject to an option of selling the deposited securities if it were considered necessary. The American Exchange at once responded, and by 13th December the rate was 4.77; and from 6th January, 1916, until the end of June it has fluctuated almost midway between 4.76 and 4.77. Finally, in May the scheme was carried a step further by the announcement that all securities mentioned in the Treasury lists which had not been offered, either for safe or for deposit, would be subject to an additional tax of 2s. in the £. The whole scheme has secured the desired object of correcting the exchange, but that success should not divert attention from the real solution, namely, the increase of exports and the reduction of imports. An important step towards the latter end has been taken by the Government in regulations designed to prohibit or to reduce certain imports. In fact, ultimately the adjustment of the balance of indebtedness must take place, and that process will involve a modification of the present adverse trade balance. To the extent that dollar securities are sold or used as collateral, or to obtain a credit for the Government in America, so far a proportionate amount of our previous invisible exports in the form of interest and dividends will have disappeared. Therefore, after the war it would be necessary in any case to make good the loss of invisible exports by either sending visible exports, or else by reducing imports. Owing to shortage of labour, the former may seem a counsel of perfection at the moment, but much could be done to effect an immediate improvement: while, as regards the civilian population,

economy in imported commodities at present is possible and is eminently desirable. The more the adverse trade balance is reduced, the less need there will be to sell securities; and, therefore, the less we shall be compelled to export (and to refrain from importing) when the war is over, in order to keep the Exchange normal.

So far, it has been necessary to concentrate attention upon the American Exchange, though this has involved an artificial separation of this Exchange from others, which would be misleading if the circumstances were normal. At the present time, the Exchanges of Holland, Denmark, Sweden, and Norway occupy an exceptional position owing to their close proximity to Germany, as well as for other reasons. Accordingly, they may well be dealt with separately. It is the policy of the Allies to prevent, as far as possible, any gold from entering Germany either directly or indirectly, and the British Government insists upon proof that the enemy shall receive no benefit whatever before they allow gold to enter a Dutch port. Not only so, but the same restriction applies to gold sent from America and other foreign countries, and so less gold reaches Holland than is required to settle the balance of trade. On 7th January, 1916, the rate of Exchange was as low as 10.46, or a discount of 13.2 per cent. Early in May, £7,000,000 of Treasury Bills were purchased by Holland, and at the end of that month the rate had advanced to 11.70, or a discount of 3 per cent., which is the cost of sending gold. Sweden, Norway, and Denmark occupy a unique position as regards the Exchanges. Early in February, the Swedish Parliament passed a law releasing the National Bank from an obligation to buy gold. It was contended that owing to great increases in exports to Great Britain, Sweden was in danger of being flooded with gold, and inflation there was feared. By April, Norway and Denmark had adopted similar measures, and it appears that the respective State Bank notes are at a premium as compared with gold. The relapse in the Exchange may be seen in the case of Sweden. In July, 1915, the rate was slightly in our favour, being 18.30 (as against a par of 18.16). It was at par in September, whence it fell steadily to 15.80 on 26th April, 1916—a discount of 19.1 per cent.

The very great reduction in the overseas trade of Germany makes the movements of its Exchange with New York and Holland

somewhat difficult to interpret. The allied blockade of the Central Powers endeavours to stop all goods of military value from reaching these countries; while, similarly, their exports, except to places reached through the Baltic, have been reduced to a very low level. German trade with the United States shows the effect of the war; but, in interpreting it, the statistics of the adjoining countries must be considered, though there is no evidence to show the extent to which their increased imports from America were in substitution for goods received previously from other sources, or how far they represent goods imported to Germany indirectly *via* the neutral country.

TRADE OF THE UNITED STATES WITH GERMANY, AUSTRIA-HUNGARY,  
NETHERLANDS, DENMARK, NORWAY, AND SWEDEN IN 1913 AND 1915.

Country.	Million Dollars, 1913.			Million Dollars, 1915.		
	Imports.	Exports.	Excess of Exports.	Excess of Imports.	Imports.	Exports.
Germany	184.211	351.930	167.719	33.164	44.953	11.789
Denmark	2.467	18.617	16.150	—	2.743	73.115
Netherlands	37.639	121.552	83.913	—	28.494	143.131
Norway	8.412	9.256	.844	—	6.982	46.872
Sweden	11.875	13.586	1.711	—	11.374	84.806
Austria-Hungary	19.084	22.244	3.160	5.221	5.325	.104

It will be seen that the total trade of Germany with America, as far as revealed by the above figures, was, in 1915, only about one-tenth of what it had been in 1913. But the increase in the exports from America to the neutral countries adjoining Germany suggests that in 1915 some of their imports from America found their way to Germany. Therefore, the reduction in German foreign trade with the United States may not be nearly so great as appears. Still, the contrast between Germany and the Allies is unmistakable, in so far as the discount on the Exchanges of the latter is largely occasioned by abnormal imports: whereas, even upon the analysis of the trade returns of the neutrals of the Baltic, which assumes the minimum re-exports from them to Germany, it is clear that her imports instead of increasing must have decreased, though it appears to be probable that upon the reduced volume of her

foreign trade there is an adverse balance. Accordingly, it becomes necessary to look beyond Germany's present estimated trade balance, in order to understand the recent movements of the German Exchange. Germany has refrained from applying the corrective of gold exports in order to adjust the exchange—at least, to any considerable extent. There is reason to believe that considerable sales of foreign securities were made by Germans in Amsterdam and New York early in the war; and by the end of 1915 Germany was suffering from the loss of the interest on those securities, which was no longer available to serve as an invisible export. Further than this it is difficult to predict results. A discount on a country's exchange is not an insuperable obstacle to victory in war, as is shown by the fact that during the war between England and France at the end of the seventeenth century, the English Exchange on Amsterdam at one period fell to a discount of 27 per cent. Moreover, the Exchanges of some of our Allies also stand at considerable discounts, though, as already explained, through other causes. In view of the reduced foreign trade of Germany, the discount upon her Exchange with neutral countries indicates a depreciation of her currency; and, further, it is an eloquent testimony to the opinion of neutrals that such depreciation is likely to continue for several years to come; that is, Germany, in their view, is unlikely to be able to revert to a gold standard for a long time after peace. Thus Mr. E. L. Franklin argues that if an American felt certain that after, say, two years, Germany would be in a sufficiently strong financial position to return to a gold basis, he would be willing to deposit his money in a first-class German bank. He would obtain at least the same rate of interest as that which he receives in England; and, in addition, he would have to calculate upon fluctuations of Exchange. If he had made his deposit when the rate of Exchange was most favourable to him, the restoration of the Exchange to par would have yielded him a profit in the two years of 26 per cent.; so that, upon this supposition, his interest would have been between 17 per cent. and 18 per cent. per annum. Such a return upon a security believed to be good would have been exceptionally high; and the fact that Dutch and American finance houses have refrained from using their capital to earn it, is evidence that they regard the restoration of the gold basis in Germany as comparatively remote.

No doubt, political tension as between the United States and Germany introduced an element of complication in the early Spring; but, as far as is known, this disturbing element did not apply to Holland, where there was a similar disinclination to deposit in Germany.

Still, depreciation of German currency does not afford a complete explanation of the movements of the exchanges of that country during the first half of 1916, otherwise the moderate, though temporary, recovery since April would be anomalous; and this suffices to show that there have been counteracting causes, though probably of a temporary nature. In the second half of December, 1915, the rate from New York on Berlin was from  $76\frac{1}{2}$  to 77; but by 8th January, 1916, it had reacted to  $73\frac{1}{2}$ ; and by the middle of that month it had recovered to above 76. This recovery was no doubt attributable in part to the measures taken by the German Government, which were announced on the 24th. Still, during February this improvement was lost, and in March the decline became pronounced, the rate being  $71\frac{1}{4}$  on the 22nd. This represented a discount of 25·20 per cent. Mr. Sigmund Metz, speaking of the sentiment in New York at that time, says that "it looked as if the decline were bottomless." The improvement in April is attributable in part, at least, to the necessity of the Argentine Government to pay a coupon which fell due in Germany in May. This involved the purchase of marks by the Argentine Government, in order to effect the remittance. Another aspect of the same movement is the action of the branches of German banks in South America, which are understood to have been purchasers of marks in New York and other markets, in order to pay off their obligations to the parent institutions in Germany. It has not infrequently happened that these branches are not able to make the remittances from their own resources; and, accordingly, they re-borrowed in the United States. Nor can this operation be dissociated from the action of the Imperial Government regarding the Exchanges. At the end of 1915, and still more early in 1916, this transaction would have been profitable. The delay seems to indicate that the banks and other houses in question expected a continued fall in the German Exchange; but that, under pressure from their own Government, they had no option but to make the remittances. It is clear that this support of the German rate of

Exchange cannot be more than temporary.<sup>1</sup> Thus, the general position appears to be that, under the blockade, as it at present exists, neutrals have very grave doubts of the recuperative power of Germany; and that this affords evidence of the financial strain which the war has imposed upon her currency and credit system.

NOTE BY PROFESSOR CHARLES GIDE (PARIS)

*(Translation)*

The depreciation of the Exchange does not appear to me to indicate an impoverishment of the country, either in Germany or in France. In both countries it indicates simply such an excess of imports over exports that both countries find themselves greatly embarrassed for means of paying, since they do not wish to send gold, and cannot, except with great difficulty, find any other method of payment.

As for Germany, if the blockade had been effective enough to stop all imports, it might very likely have resulted that the mark would not have suffered any depreciation. And yet Germany's financial resources would not have been increased!

France has, in normal times, two modes of payment which assure her, as a rule, a favourable exchange: these are—

1. The interest and dividends, or the capital, of the numerous foreign investment which she owns. Unfortunately, the greater part of these investments are located either in Allied countries (Russia, Belgium, and Italy) or in enemy countries (Austria and Turkey), and consequently it is very difficult for France to make use of them. Her investments in neutral countries (United States, Holland, etc.), which would have been most useful to her in this connection, are precisely those which have failed her.

2. The money spent and the purchases made by foreign travellers to Paris, Nice, etc. Then just because of the war, this source of wealth has failed France entirely.

But to counterbalance this loss, we may anticipate that, after the war, foreigners, and especially American tourists, will abound. All the towns of the Marne and the Meuse will become places of pilgrimage.

<sup>1</sup> Since the above was written there has been a renewed fall, the quotation being 73 on 30th June.

## NOTE BY PROFESSOR EINAUDI (TURIN)

The Italian Exchange on London, which was 0.55 per cent. against us on July, 1914, went to 7.51 per cent. (always against) in September, 1914, decreased to 2.60 per cent. in December, 1914, increased again to 6.61 per cent. in February, 1915; to 11.25 in May, 1915; to 18.11 per cent. in October, 1915; and to about 26.80 per cent. in March, 1916.

As our notes were inconvertible before August, 1914, the mere fact of non-convertibility cannot be the cause of the rise of the exchanges against us. A nearer view of the causes of the depreciation of our currency can be had from the following figures of the note issues of the three Italian banks of issues: Banco d'Italia, Banco de Napoli, Banco de Sicilie.

31 July,	1914	.	.	.	Million lire	2.265
31 December,	"	.	.	.	"	2.936
31 March,	1915	.	.	.	"	3.111
30 June,	"	.	.	.	"	3.855
31 October,	"	.	.	.	"	3.845
29 February,	1916	.	.	.	"	3.831

It would, however, be a rash conclusion to ascribe wholly the rise of the Exchange to the rise of the note issues. It is noticeable that the note issue does not rise after 30th June, 1915, and that the greatest rise in the Exchange occurred after that date. The financial authorities were prudent in their use of the printing press; and the pressure of the increased issues was diminished, moreover, by some very powerful factors.

1. *The Reversion to the Cash Payments.* The note issues are to-day less supplanted in Italy by commercial bills and cheques.

2. *The Hoarding of Notes.* It was a wonderful fact that the payment of the instalments of our three war loans was made without a corresponding decrease in the private deposits of banks and saving institutions. Many subscribers paid in hard cash which they had hoarded. Thus it would appear that the increase of the freely circulating medium was not from 2,265 to 3,831 million lire, but from 2,265 to an uncertain figure, which, if less than 3,831 million, is the increase sufficient to explain the rise of the exchanges on London against us to above 26 per cent. Even if we are to take account also of the increase of the issue of the *State* notes of small denominations 5 and 10 lire, which was of 330 millions after 30th June, 1915, to-day, the rise of the exchanges does appear

disproportionate to the real increase in the *circulating* medium of exchange.

The rate of exchange is from to-day settled between those who offer Italian bills on foreign countries and those who offer foreign bills on Italy. Save for the second semester of 1914, when our credits on foreign countries increased as we sold, during the neutrality period, to foreign countries, and especially to France, cotton and woollen goods, motor-cars, and other goods, during 1915 and 1916 the balance of commerce went heavily against us. There were no expenditures of foreign travellers and no savings sent by our emigrants to their families. These two items go normally up to 1,000–1,200 million lire in settling our debit and credit international balances. We had to settle our increased (by Government war purchases) debit balance by means of foreign debt. As far as we in Italy know, the Italian Government has issued a 25 million dollar 6 per cent. loan in the United States; and has got a large loan from the British Government. If the Italian Government could sell *freely*, exchanges on London against the produce of the British loan, I think that our international payment balance could be well settled; and the rate of exchange could not go up to 26 per cent. against us. But can the Italian Government sell exchange freely? Or are they obliged to economise—as they would be if the proceeds of the English loan were to last to the end of the war? As I know nothing on the matter, I do not draw any conclusion. From a theoretical point of view, it seems that a foreign loan of a fixed sum *per month* would have been more useful than one of a *lump sum*. The debtor is more apt to economise the lump sum; whereas the *monthly* assured loan would have given the means of selling regularly the sum of exchanges required to settle our uncovered (by commercial credits) balance of international payments.

#### ON CURRENCY NOTES AND THE FOREIGN EXCHANGES

BY PROFESSOR LORIA (OF TURIN)

*(Translation)*

In the case of Currency Notes, we find an issue of notes by the State, which is not caused by the exigencies of commerce nor by

the quantity of goods to be circulated, and, therefore, represents a net addition to the quantity of money, or to the proportion of the latter to the quantity of goods, which should reduce the value of money. Since, however, this paper money is convertible into gold, its depreciation ought necessarily to extend to gold, which should cause an increase of imports and a decrease of exports, and thus an unfavourable balance. Under normal conditions, all this would only have the effect of causing the conversion of Currency Notes into gold and the exportation of the latter, which would tend to eliminate the excess issue of paper money and the rise in prices. If, however, the State put notes in circulation again (which had been brought to be paid off), then the above process recommences—there is a fresh rise in prices, an unfavourable balance, a conversion of notes into gold, etc., etc.—until all the reserve of gold of the country has been exhausted. But as long as such exhaustion has not been reached, the foreign exchanges can never pass beyond par, if it were not for increased charges of freight and insurance of gold: for, when they would have passed par, the person indebted to a foreigner hastens to convert his notes into gold and to export the latter.

But circumstances are substantially altered if the country, whose Government issues notes, prohibits the exportation of gold or surrounds it with a sort of discredit which hinders its being exported. In these conditions, when the issue of notes by the State has caused a rise of prices, an excess of imports, and an unfavourable balance, the debtor to a foreign creditor has not the choice between buying Exchange and exporting gold; he must at any cost purchase Exchange, and, therefore, is obliged to buy it above the gold point. In other words, in this case the national money is at a discount as compared with foreign currency—a discount which is not due to the inconvertibility of the notes (for the notes are convertible into gold), but to the new impediments which hinder the exportation of gold. In fact, here one finds an agio on Foreign Exchange due to the prohibition of the export of gold.

It seems to me that it is in this way that one must explain this fact—*obviously* strange—that English paper, payable in gold, suffers a loss as against foreign currencies (*e.g.*, dollars). All has not been said when this loss has been assigned to the excess of imports by England over its exports, for that excess, by itself,

would not cause the course of Exchange in England to rise above the gold point, and at present that par has been far passed. This rise in the rate of Exchange against England, which is a real depreciation of English currency, is due to these two facts: (1) the issue of notes by the State, and (2) the impossibility of exporting the metal—of which the first *creates* the unfavourable balance, and the second the impossibility of correcting it otherwise than by buying Exchange; the latter conferring a monopoly on the possessor of Exchange which enables him to advance the price which is without determinable limits.

Still, I do not say with Professor Nicholson that the Currency Notes have banished the gold standard from England. I would rather say that *England has a non-exportable gold standard*, which at the same time is depreciated in comparison with foreign countries.

And all this has a remarkable consequence. When gold is exportable, the excess of notes issued by the State becomes converted into gold, and, therefore, is withdrawn from circulation, which, in this way, soon returns to its natural uses. But when, on the contrary, gold is not exportable, the excess of notes issued by the State no longer returns to the Treasury—whence it could not again emerge—but it reaches the sellers of Exchange, who hasten to return it to circulation. Then, in these conditions, the excess of the circulation is permanent, which makes its action upon prices and the unfavourable balance correspondingly permanent. Thus, where an excess of convertible notes issued by the State would only give rise to a temporary unfavourable balance, that excess, together with a moral prohibition of the export of gold causes a permanent unfavourable balance; and accordingly its action, in increasing the course of Exchange, becomes perpetuated.

#### VI.—ECONOMY—INDIVIDUAL AND NATIONAL

THE question of economy forms a connecting link between some of the topics already discussed and the problems of public finance which still remain to be dealt with. On the one side it is theoretically conceivable that the economy of individuals may react upon prices; since, if that economy takes the form of abstaining from the consumption of goods or from the employment of services, and if the capital and labour so displaced are not re-employed, it may be that the aggregate of goods will be diminished; and if, at the same

time, the other factors in the equation of monetary exchange remain unaltered, then, through this cause, prices would tend to rise and the saving would call into existence conditions inimical to its own continuance. On the other side, the paramount necessity for augmenting exports, involves, as an easily deducible corollary, the need for economy amongst consumers in this country in order to liberate the labour and capital which is required to produce the exports. Further, the finance of the war makes the greatest claim for economy, yet it is again possible that such economy may not be productive of war service to the State to its full nominal value, since the consumption retrenched may be of such a nature that it deprives a certain amount of capital and labour of employment and, if both are highly specialised, they either cannot be re-employed, or, if re-employed, only upon rates which will diminish this contribution to the national dividend and thereby tend to lessen *pro tanto* the yield of taxation. For instance, if people very greatly reduced their consumption of books (and assuming for the moment that paper has no use as a war material) there would be a loss in the very highly specialised machinery rendered idle, and this would show itself in a reduction in the taxation previously secured from the profits made in the industry as well as from such indirect taxation as was lost by reduced spending power of the operatives engaged in it. Or again, it is obvious that economising in dutiable articles causes the State to sustain a loss of the taxation derived from the proportion of the consumption of those commodities now economised.

When economy was first preached in the earlier part of the war, there was a tendency to urge the practice of it indiscriminately. The main object aimed at was saving as much as possible, irrespective of where the economy took place. But saving, unless the proceeds were paid in taxation or were lent to the Government, was of slight value for aiding the prosecution of the war, and in many cases might be of no value, or even be detrimental to that end. While this extension of the movement was fairly obvious, it was only experience which revealed to the War Savings Committee that there were various types of saving, and that these were of unequal value for equal sums economised from the standpoint of the national interest. No doubt what has perplexed the public is the natural disposition to interpret the object in terms of money. Whereas

the whole secret of the phenomenon (and one which lies close to the surface) is to think in terms of commodities. And this has two aspects—on the one hand, when the proceeds of saving are transferred to the Government there are the commodities which will be procured by reason of that saving by the Government; on the other hand, there are the commodities which the saver refrains from consuming. Further, it is often necessary to inquire into the conditions of production of each class of commodities.

In some respects the exigencies of the recruiting campaign have induced a false perspective as regards general economy. The former emphasised the need for very large armed forces. But those forces, great as they are, require the provision of enormous quantities of commodities. One aspect of this problem revealed itself in the formation of the Ministry of Munitions last summer. Behind that phenomenon, again, there is the problem of the provision of the labour and the materials for producing all the necessary naval and military supplies. Where civilian demand is competing for materials, labour or transport, it is making the task of providing those supplies more difficult. Further, the productive power of the country has not been able to provide all the plant and labour necessary to furnish certain classes of supplies; and it became necessary to import these. Since, at first, there was no material reduction in our other imports, and exports were at a comparatively low level, it followed that an adverse trade balance showed itself, with the consequence of an adverse exchange with the United States of America. For reasons, explained in the preceding part, the ultimate correction of the Exchange is to be sought in diminishing the adverse trade balance by increasing exports, decreasing imports, or partly by one partly by the other. Assuming that the trade balance with the United States would now adjust itself somewhere about the level of that of 1913, it follows that the Government purchases in America involve either that the civilian population cannot continue to consume so much imported goods from that country, or else that they must increase their exports.

There are other considerations of a somewhat different order. In all those cases where commodities are subjects of possible economies, and where they are not such as are used by the forces nor imported, it makes a difference whether they are produced under conditions of increasing or of diminishing return (cf. Pigou,

*The Economy and Finance of War*, pp. 35, 36). To economise in the former is to make the cost of the new production, after the economy has taken place, tend to be somewhat higher. Therefore such an economy, other things being equal, tends to make the price of the commodity subject to economy higher than it would otherwise have been, and therefore to that extent such economy will be likely to have the effect of reacting injuriously upon the scheme of demand of consumers and so far to militate against its permanence. In other words, if 1,000,000 consumers reduce their demand for a manufactured commodity produced under conditions of increasing return, their action will have the probable effect of raising the price of the quantity still produced, and thereby reducing the purchasing power of their incomes as well as of those of all others who buy that commodity and who have decided against economising in it. On the other hand, economising in commodities produced under conditions of diminishing return will be affected in the opposite direction. There a reduction in demand involves a more than proportionate reduction in the cost of production, hence economising in these is preparing the way for further savings and not, as in the case of manufactures, rendering them more difficult. Accordingly, other things being equal, saving in the use of wool, coal, food of all kinds, cotton, etc., is highly beneficial.

The primary need is the elimination of civilian demand for all those commodities that are in most urgent demand either by the Navy or the Army to such an extent as it is possible to dispense with it—if possible, as is most desirable, by self-abnegation on the part of civilian consumers: if that is not sufficiently manifested, by drastic Governmental action. Rubber, for instance, is urgently demanded by the military authorities, therefore it should only be purchased by the public in cases where there is an urgent need for it of a very special character. Further, the demand for goods, which contain materials, required for commodities particularly needed by the forces and the production of which requires great skill, should likewise be dispensed with. Thus, orders for the finer manufactures of iron and steel for household use or in the form of machinery to make goods for home consumption and not in place of imports should be postponed, while an exception might be made in favour of machines, which, as long as the Exchanges need correction, are designed to produce goods for export. At this stage

a point arises which calls for discussion. Under normal conditions limitations of imports tend to react unfavourably upon exports, since it may diminish the power of foreign countries to absorb our exports. As long as freights remain abnormally high, the situation is modified in important respects. Not only does the great volume of imports require extra shipping to carry it, but also, per unit of value of imports and exports, the transport of the former requires more tonnage. It follows that a saving in the bulk of imports would have a material effect in reducing freights. Further, a reduction in freights would be an important aid to increasing exports especially in all those cases where the raw material of the goods exported has been previously imported. No doubt high freights constitute a highly valuable addition to our invisible exports at the present juncture, but their effect upon checking exports must not be lost sight of. In many cases such increased freights constitute a double handicap upon exports, first, in so far as they render the raw material more difficult to procure, and secondly, in so far as they increase the price payable upon delivery of the finished goods at a colonial or at a foreign port.

The elimination, as far as possible, of civilian demand for the commodities required by the forces or for the labour, plant, or materials used in producing those commodities, occupies a position of particular importance in an organised system of economy. To a large extent this war is one of productive forces, and any diversion of the supply of goods which are of prime necessity for military operations from the fighting front, where they exert an important, and it may be a decisive, influence upon the conduct of the campaign, is the worst kind of economy. Special attention has to be paid to the avoiding of the diversion of labour, plant or materials from these objects to supplying civilian demand.

In the next place economy in the use of food of all kinds, more particularly during the period of high freights, is highly desirable. There can be little doubt that during the long period of low prices somewhat lax habits of domestic management had been formed. Hitherto the question of securing the largest amount of nutritive value from a given quantity of food was regarded as the concern of the individual. At present it partakes more of the nature of a national problem. The same nutrition could be secured from a much less amount of food by better organisation and by the

prevention of waste. This is an aspect of the problem which has as yet received less attention than it merits, for the saving which could be accomplished by the adoption of better methods would effect a material reduction in imports, and that, too, of the satisfactory type in reducing the consumption of commodities which are subject to conditions of diminishing return. Saving in the use of coal (including that in power and lighting) is of a generally similar character, except in so far as the question of imports does not arise. Indirectly there is a large war demand for the specialised labour of coal miners partly to supply the needs of the fleet, partly for munition works and for export. Economy in oil is even more important. War demands again show themselves in the case of textiles, especially certain woollens, hence economy in clothing is also required on the part of the community.

In a recent and penetrating examination of this question Professor Pigou (*The Economy and Finance of the War*, pp. 23-41, 90-96) notes that economy in groups of luxuries produce a value for the nation less than the nominal amount economised. Thus savings in dutiable commodities only have a net economy value of the amount of consumption retrenched less the duty. Savings in the dismissal of highly specialised servants, who have little utility for war needs, result in only a small gain to the State. Savings in refraining from attending amusements and recreations, he contends, have similarly a small public value, since the services of the actors or musicians are highly specialised and cannot be diverted to performing work of equal value in the carrying on of the war, hence the national income would suffer by the reduction in their earnings. While this argument is valuable in drawing attention to a danger of some waste in possible economies, it requires qualification in at least one direction. Economy to the extent required cannot be attained without a considerable diversion of services and capital. It is not difficult to demonstrate that the total required is unlikely to be secured by the ideal economies; and, after that, the deficiency must be made up by those which, in Professor Pigou's phrase, produce less than the full value to the State. The object of the individual should be to restrict his expenditure to those things which are required for his productive efficiency for his particular occupation, transferring the command over goods and services (represented by the remainder of his income) to the State either in the form of taxes

paid by him or of loans. It is not a valid argument against economy that his self-denial in luxuries yields less than its nominal value to the State, when at the same time his other economies in commodities classed under the head of necessities or comforts may yield more than the nominal value. Both types of economy are necessary, and in certain important respects, one is the complement of the other.

The economy of individuals is only one side of a complex situation. Economy in public expenditure is even more necessary, if that be possible. Excessive public expenditure on the one hand calls for increased taxation and private economy, while on the other it checks the latter by the force of a bad example. Almost every writer upon public expenditure has insisted upon the need for public economy, and most of them have frankly admitted the difficulties in securing it. These difficulties are never greater than during a great war. The ordinary parliamentary and departmental devices to prevent waste are in danger of being considered unpatriotic. The formation of armies upon a scale which had not been dreamt of before the war, involved a special urgency in Government orders, and thus purchases were made at prices which were very high. Improvisation necessarily occasioned mistakes, and these added to the waste. Now that the dimensions of the problem have been grasped, and many of the steps necessary to meet it have been taken, the time has come to recover control of the expenditure, not with any intention of starving the efficiency of the forces, but rather of increasing it, by securing the best results from the funds expended. Early in 1916 the war had reached a stage in which more effective measures can be taken for the best use of the financial resources of the Empire. Unnecessary or ill-advised outlays constitute a dissipation of those resources, and all available measures should be taken to avoid them. Public economy it may be observed, should not be understood merely in the sense of limiting expenditure, but in that of obtaining the most satisfactory results from a given expenditure. If the results are carefully supervised, the general public will receive renewed encouragement to persevere in doing its part in providing the funds, secure in the conviction that the fruits of its sacrifices are not being wasted.

As in the case of individual economy, attention must be paid not merely to monetary values but to economy in the use of things.

The Government scheme for the chartering of ships may at one stage have had a somewhat prejudicial effect. As freights began to advance, it was not unnatural for the Departments concerned to consider that a good bargain had been made upon behalf of the nation, and it seems not impossible that the actual use of the tonnage under Government charter was not as economical as it might have been. If that was so, the result was to diminish more than was necessary the remaining tonnage available for the general public, with a consequent great rise in freights which aided rises in prices of many commodities, rendering it more difficult for the public to economise.

The conditions of purchases abroad by the Government raise some interesting questions. Now that there is a joint contract Department formed by the Allies to make their purchases, it would appear that this Department would constitute a buyer's monopoly for commodities, such as munitions. Thus in the United States, which is the country chiefly affected, purchases of munitions by the Central Powers must be inconsiderable, if not non-existent. But the buyer's monopoly is only partial, for the South American countries must now replenish their arsenals from the United States instead of having the choice as between Europe and America as was the case before the war. Still, though the buyer's monopoly is only partial, it is to some extent an influence towards not excessive prices. That influence, however, is counteracted by others more powerful. The partial buyer's monopoly is one exerting an intense demand for commodities which are in short supply. Engineering firms in the United States must be offered such prices for munitions as will tempt them to make the necessary alterations of plant. Thus the nature of the circumstances points to the great difficulties in an effective economy in foreign purchases of munitions. Other Government purchases abroad are met with the difficulty that they have to compete with the previous demand for the commodity, so that the Allies introduce a large new demand into markets where the stock cannot be increased rapidly, and hence high prices are inevitable.

#### VII.—WAR FINANCE

At the time when our last year's report was drafted, the total expenditure of the British Government was reckoned at about

£1,000,000,000 a year, and our proposals for taxation were based upon that figure. Long before our present report came to be drafted, this figure had been largely exceeded, and the total expenditure had crept up from £3,000,000 a day to £4,000,000, then to £5,000,000, and by the beginning of July the issues of the Exchequer amounted to £6,000,000. The Prime Minister and the Chancellor of the Exchequer, however, were careful to explain that this sum included money required for the purchase of Dollar Securities. Consequently, the amount of taxation which seemed adequate twelve months ago has become wholly insufficient; at the same time, and chiefly as a result of this increased expenditure, the national income (*i.e.*, wages, salaries, and profits of citizens in terms of money) has grown very largely. No exact figures are obtainable; but Sir George Paish and Professor Pigou reckon that the present income is about £3,000,000,000, as compared with a pre-war income of about £2,300,000,000; other authorities put both totals rather lower. How far the *real* income of the nation has increased, and whether it has increased at all, are difficult questions: it may be that the chief change made in the last two years has been in distribution; *i.e.*, the wage-earner is getting a larger share than he used to get; whilst owners of fixed capital, such as railways, houses, and agricultural land, at the present time are getting a smaller share.

We may now examine the different methods by which the war has been financed, and we may then consider which methods are preferable. Up to the present, the war has been financed by four methods: (1) Increased taxation; (2) loans by the public; (3) loans by the banks; and (4) loans from the United States. The increase in taxation, which is the soundest method of finance if equitably adjusted, is shown in the following figures of Government revenue—

Year ending	Revenue.
March 31st, 1914	£198,243,000
“ 1915	226,694,000 <sup>1</sup>
“ 1916	336,767,000
“ 1917	502,275,000 <sup>2</sup>

<sup>1</sup> Estimated by Chancellor of the Exchequer before the War at £207,146,000.

<sup>2</sup> Estimate given by Chancellor of the Exchequer in Budget Speech on 4th April, 1916. Certain small concessions have since been made in the proposed new taxes.

If allowance be made for a normal annual increase in revenue of £5,000,000 as during the last ten years before the war, the increase in taxation directly due to the war is obviously about £289,000,000 comparing the estimated amount for the current financial year ending 31st March, 1917, with that for the year ending 31st March, 1914. In our last report, we came to the conclusion that it was not possible to fix the ratio of the cost of the war to be borne by additional taxation imposed during the war.

After additional taxation, the next two methods by which the war has hitherto been financed are loans from the public, another form of sound finance; and advances of newly-manufactured credit from the banks, usually termed subscriptions by the banks. The amount of credit raised by these two sources up to 12th August, 1916, is shown by the following table—

	Exchequer Receipts.
3½ per cent. War Loan, 1925-1928 . . .	£332,000,000
4½ " 1925-1945 . . .	592,000,000
Treasury Bills, 3, 6, 9 and 12 months, outstanding on August 12. . . .	872,000,000
3 per cent. Exchequer Bonds, March, 1920. . .	48,000,000
5 " Oct. 5, 1919. . .	30,000,000
5 " Dec. 1, 1920. . .	234,000,000
5 " Oct. 5, 1921. . .	50,000,000
War Expenditure Certificates . . .	18,000,000
War Savings Certificates . . .	18,000,000
<hr/>	
	£2,194,000,000

The above table is exclusive of £62,000,000 raised under "Other debt created under the War Loan Act, 1915," and "Temporary Advances."

It might be thought that it is immaterial whether the public or the banks subscribe to war loans, provided that the Government obtains the required amount. But, on analysis, there is found to be a very important distinction in after effects on the credit market and commodity prices between these two sources of subscriptions. Taking the banks as one unit, when the public subscribe to war loans out of their bank credit balances, there is, after Government disbursements, in net effect, a debit and credit which cancel one another; and the aggregate of banking deposits (customers' credit balances) remains stationary (or diminishes if some of the credits pass to accounts with debit balances). But when the banks subscribe to war loans, they do not do so out of

shareholders' capital, but, in net effect, by crediting the amount of their subscriptions to customers to whom the Government is indebted for goods and services. This they are able to do, because they are the recognised custodians of credit. The total amount of balances at the credit of their customers increases by the amount of bank subscriptions to the loans (provided some of the credit does not pass to accounts with debit balances). It is obvious, therefore, that credit balances due to customers of banks are not increased when customers subscribe from their credit balances to war loans, but are increased when banks subscribe to war loans. Consequently, there is no increase in the immediate available purchasing power of the community caused by depositors' subscriptions, but there is by bank subscriptions. The objection to a great increase in the immediate available purchasing power of a community during war time is that it leads to an inflation of commodity prices. For commodity prices to remain stationary, goods and services at the disposal of the civilian population should increase proportionately to an increase in credit.

When customers of banks obtain credit from banks in order to subscribe to war loans, no great inflation of commodity prices will be caused by this action, provided such customers repay the borrowed credit at an early date by a transfer of credit from some other source. This transfer necessarily entails some person's account with a credit balance being debited with the amount.

The great economic distinction between the Government in war time and the public in peace time obtaining grants of credit from the banks is that the former uses the grant in order to produce and consume goods and services for the destructive purposes of war; but the latter, in order to increase permanently productive power and, consequently, to increase the available supply of goods at the disposal of the community in the future.

In connection with the present war, it has to be borne in mind that a large part of the expenditure of Great Britain represents loans to her Allies and Colonies, and should in due course be repaid by such borrowers.

How much of the foregoing total amount of loans so far raised for the present war, namely, £2,194,000,000, represents loans to the Government by direct transfers of credit from the public to Government account, and how much newly-manufactured credit

by the banks, it is not possible to state accurately. Up to the present, banks of the United Kingdom have probably subscribed between £350,000,000 and £400,000,000; for up to 31st December, 1915, it is known that they had subscribed between £300,000,000 and £350,000,000. To the two war loans the banks subscribed about £250,000,000.

Provided that bankers' loans in other directions had remained the same in amount as they were before the war, the grant of over £300,000,000 credit by the banks to the Government since the commencement of the war up to 31st December, 1915, would have caused a corresponding increase in the aggregate of customers' credit balances, less excess withdrawal over deposit of legal tender. The actual increase in the aggregate of credit balances between 31st December, 1913, and 31st December, 1915, was £201,000,000 (*Statist*), thus proving that other factors have operated in the direction of reduction in credit balances, in particular reduced bank holdings of mercantile bills and excess withdrawal of legal tender, since the commencement of the war. There was a reduction in investment capital value through the conversion of Consols in connection with the last War Loan. It is impossible to ascertain the exact amounts of Treasury Bills held by banks, because some banks include them under the heading "Investments," some under "Bills discounted," and some under "Bills and Advances," where bills are not stated separately.

Hitherto the banks have passed their "subscriptions" of grants of credit, and subscriptions of customers from credit balances, by instalments through the Public Accounts at the Bank of England, their own balances at the Bank of England being debited and the Public Accounts credited, the transactions being reversed after Government disbursements and the return of payment warrants (after being credited to customers of joint-stock banks to whom the Government was indebted for goods or services). This roundabout process of successive transfers has, at times, involved heavy displacements of credit. It may be suggested that in any future loans the Paymaster-General should take the shorter path of drawing direct on the banks to the extent of the amount standing to the credit of the Government, the payees (as far as possible) being customers of the drawee, in order to avoid great displacements of cash.

The fourth form of borrowing by the British Government for the purposes of the war has been the raising of a loan of £50,820,000 in the United States to meet part of the purchases of war stores made in that country. Some part of this loan was subscribed by the banks in the United States and some by the public. Part was, therefore, the loan of newly-created credit and part the loan of existing credit. In present circumstances, the settlement of a large adverse trade balance can be accomplished most conveniently by the selling outright of foreign securities in the respective countries for English account. The more Great Britain sends gold to, or raises temporary credits in, the United States, the greater the inflation of prices in that country; and, consequently, a vicious circle will be created against Great Britain, reflected in higher prices for purchases from the United States. The raising of temporary credits abroad on deposit of securities as collateral is legitimate up to a certain point, for the same reasons that nothing can be said against the practice of banks temporarily financing the Government in the early stages of war by subscriptions to Treasury Bills.

Before the war, the adverse trade balance averaged about £10,000,000 a month, which was settled in the ordinary way by what are usually termed the invisible exports of Great Britain, namely, interest on foreign investments, shipping, banking, and other charges due to Great Britain, which before the war were estimated at about £350,000,000 per annum, leaving excess accumulations of capital abroad of over £200,000,000 per annum. During 1915 and 1916 (up to May), the adverse trade balance, as disclosed by the Board of Trade Returns, has been at the rate of £30,000,000 a month; and if Government purchases abroad, on behalf of Great Britain and her Allies, particulars of which have not been published, are taken into consideration, the true adverse trade balance of the United Kingdom has probably been nearer £45,000,000 a month up to June, though since then it has fallen, and may fall further.

The main principle to bear in mind, so far as internal loans are concerned, is that the public must be prevailed upon to finance the war by the loan of their own credit, and not the banks by means of further grants of credit. Few people realise that the amount of war loans that may be raised by any Government is

almost unlimited, provided the terms of issue and methods of collection are sufficiently attractive to the public. There is no limit to the number of times credit may be transferred to the Government, the transferor on each occasion receiving in exchange Government securities granting a lien on the production and services of posterity. The rate of interest the Government must offer to attract sufficient loans may have to be raised from time to time, but this is a small evil compared with the evils of inflation arising from great additions of bank credit. There is little reason for pessimism if the public can be roused to their duty of subscribing repeatedly to internal war loans. Provided sound methods of financing the war are adopted by the two groups of belligerent powers, finance will not end the war, nor will "silver bullets" in the form of capital wealth. If, however, unsound methods of finance be adopted to any great extent by any of the belligerents, the inevitable rise in commodity prices will, sooner or later, give rise to an insistent call for peace by the masses of the nations affected. Undue extension of bank credit means fictitious prosperity. One of the chief lessons of the war has proved to be the comparative ease with which the Government of a great nation can raise hitherto unheard-of sums.

**A REVIEW OF THE DIFFERENT FORMS OF BORROWING  
ADOPTED BY THE GOVERNMENT SINCE THE  
COMMENCEMENT OF THE WAR**

The first war loan, which bears  $3\frac{1}{2}$  per cent. interest, was issued on 17th November, 1914, at £95 per cent., payable by instalments up to 26th April, 1915, or, in full, under discount at the rate of 3 per cent. per annum. It yields over 4 per cent. per annum to a subscriber holding until the date of redemption, 1st March, 1928. The Government, however, reserved the right to redeem the loan after 1st March, 1915, on giving three months' notice. The total Exchequer receipts from the loan were £332,000,000, inclusive of bank subscriptions, which amounted to about one-quarter of the total amount. Part of the success of the loan was due to an undertaking by the Bank of England that for a period of three years it would advance on the loan to the holder at any time, without

margin, the full value expressed by the issue price at 1 per cent. under Bank Rate varying.

If the loan had been a 4 per cent. one, issued at par, public subscriptions would undoubtedly have been greater than they were. The terms of issue— $3\frac{1}{2}$  per cent., issue price £95—were a miscalculation. The loan at its issue price only yields about £3 13s. 9d. per cent., although it will eventually cost the Government fully £4 per cent., when the cash bonus of £5 at redemption is taken into consideration. To meet the increased cost of living under war conditions, investors naturally prefer a loan yielding an immediate 4 per cent. to one eventually yielding 4 per cent., but a lower rate for the present. It is a well-proved fact that market prices of stocks do not reflect the promise of future cash bonuses until a few years before date of redemption.

The second war loan, which bears  $4\frac{1}{2}$  per cent. interest, was issued on 21st June, 1915, nominally at par; but, owing to the acceleration of the first payment of interest, really at £98 16s. per cent. The date of redemption of the loan, at par, is 1st Dec., 1945; but the Government wisely reserved the right to redeem the loan at any time on, or after, 1st December, 1925, on giving three calendar months' notice. As in the case of the first loan, subscriptions were made payable by instalments, but might be paid in full on or after 20th July, 1915, under discount at the rate of  $4\frac{1}{2}$  per cent. per annum. Concurrently with the issue of the prospectus, and whilst the application list remained open, widespread appeals to patriotism were made by extensive Press support and advertisements. Many of the advertisements were powerful direct appeals to women to subscribe to the loan, and thus help their fighting countrymen. The popularising of the loan through the Press was a wise policy. The total Exchequer receipts from the loan were £592,000,000, inclusive of bank subscriptions, which amounted to nearly a third of the total amount. It may have been a mistake to fix the optional date of redemption by the Government at so late as the year 1925. Optional redemption from the year 1920 might not have affected the success of the loan, and would have afforded the Government the opportunity of conversion to a lower rate of interest from 1920. There is reason to believe that the Government will be able to issue loans bearing less than  $4\frac{1}{2}$  per cent. interest within five years after the declaration of peace.

Subscribers to the loan obtained many special privileges. It was provided that in the event of future issues (other than issues made abroad or issues of Exchequer Bonds, Treasury Bills, or similar short-dated securities) being made by the Government, for the purpose of carrying on the war, stocks and bonds of the 4½ per cent. loan would be accepted at par, plus accrued interest, as the equivalent of cash for the purpose of subscriptions to such issues. This is a very equitable provision, for it is only fair that subscribers to early war loans should receive the same rate of interest as subscribers to later war loans. Without such a promise, many investors would wait before subscribing until such time as, in their opinion, the interest on Government war loans had reached the highest rate likely to be offered. As a matter of fact, the provision has proved to be of little value, since the Chancellor of the Exchequer has managed to borrow all he needs by the issue of Bonds, Bills, and Certificates, which have taken the place of a Third Loan, and so relieve him from the necessity of raising the interest on the Second Loan to the higher rate which he now has to pay. Nevertheless, subscribers to the Second Loan, who see their security standing at a discount of several points, will derive little consolation from the assurance that their contract has been observed to the letter, for they could not have expected that the place of a Third or 5 per cent. Loan would be taken by issues of Bills and Bonds for periods of two, three, and even five years. It was also provided that holders of 4½ per cent. war loan should have the additional right, in respect of each £100 stock (or bonds) fully paid, to exercise one or other of the four following options of conversion, provided application was made not later than 30th October, 1915.

*Option 1.* To exchange stock (or bonds) of 3½ per cent. war loan for fully-paid stock (or bonds) of 4½ per cent. loan, at the rate of £100 of the former, with a cash payment of £5 per cent. thereon, for £100 of the latter. The Chancellor of the Exchequer stated on 17th November, 1915, that the amount of 3½ per cent. loan converted into the 4½ per cent. loan had been £135,000,000 out of the outstanding amount (£350,000,000). Many people preferred to continue to hold the 3½ per cent. war loan on account of its short-dated maturity and the special borrowing privileges attached to it.

*Option 2.* To exchange stock (or stock certificates) of  $2\frac{1}{2}$  per cent. Consols to an amount not exceeding £75 nominal, for fully-paid stock (or bonds) of  $4\frac{1}{2}$  per cent. war loan (1925–1945), at the rate of £75 of the former for £50 of the latter. This option was undoubtedly in favour of the Government in the long run. At a price of  $66\frac{2}{3}$ , Consols yield  $3\frac{3}{4}$  per cent.; and as they are only redeemable at par at the option of the Government after 1923, they obviously, if bought at  $66\frac{2}{3}$ , represent an investment yielding  $3\frac{3}{4}$  per cent. and continuing practically for all time without any fear of conversion to lower rates. Holders of Consols who converted into the  $4\frac{1}{2}$  per cent. loan will only be assured of  $4\frac{1}{2}$  per cent. until 1925, after which year they will probably receive less than  $3\frac{3}{4}$  per cent. The Chancellor of the Exchequer stated on 15th May, 1916, that the amount of Consols converted into  $4\frac{1}{2}$  per cent. war loan had been £255,200,000, leaving £280,500,000 Consols outstanding on 31st March, 1916.

*Option 3.* To exchange stock (or stock certificates) of  $2\frac{3}{4}$  per cent. annuities, to an amount not exceeding £67 nominal, for fully-paid stock (or bonds) of  $4\frac{1}{2}$  per cent. war loan (1925–1945), at the rate of £67 of the former for £50 of the latter.

*Option 4.* To exchange stock (or stock certificates) of  $2\frac{1}{2}$  per cent. annuities, to an amount not exceeding £78 nominal, for fully-paid stock (or bonds) of  $4\frac{1}{2}$  per cent. war loan (1925–1945), at the rate of £78 of the former for £50 of the latter.

Provision was made in connection with the  $4\frac{1}{2}$  per cent. war loan for subscriptions of sums less than £100 in multiples of £5 through the Post Office. There were also issued scrip vouchers for 5s., 10s., and £1, to encourage the small investor, but the aggregate of these very small subscriptions was not large. The Chancellor of the Exchequer stated on 20th January, 1916, that the number of small vouchers sold had been: 5s., 1,501,000; 10s., 421,000; £1, 827,000—and their total value, £1,413,000. The number of £5 scrip certificates sold was 798,220 and their value £3,991,100. Other subscriptions through the Post Office amounted to £30,642,000, and through the Trustee Savings Banks to £3,840,000.

In the House of Commons on 22nd November, 1915, the Chancellor of the Exchequer expressed disappointment at the smallness of the amount collected by scrip vouchers and scrip certificates of small denominations, particularly so in view of the

large amount being paid in weekly wages. But those who have had any experience of the collection of small deposits from the public knew the scheme would be a failure. The working classes may be divided into two broad divisions: those who have not savings bank accounts, and those who have savings bank accounts. Unless the working man now in receipt of a greater income was a saver before the war, there is little probability of his starting to save during war time. It has to be borne in mind that a missionary campaign to persuade the working classes to save must take years to effect any material result. Moreover, a great part of the working classes are not in a state of mind to save unless and until they see the well-to-do stinting themselves. Again, much of the extra expenditure of the working classes has gone in foodstuffs; and in the case of the poorer classes who were habitually underfed, any considerable amount of savings can hardly be expected. The reason why the working classes, who have already learnt the habit of saving, and who have, in most cases, savings bank accounts, have shown a disinclination to invest small sums in war loans, are as follows—

1. They have in the past become accustomed to the pass-book system and the recognised savings banks. They like to see their savings shown in a pass-book, to which they may add to or take from as they may desire.
  2. They are prepared to accept a low rate of interest, provided they have reasonable facilities for deposit and withdrawal, and absolute security.
  3. They do not like to lock their money up for long periods: in any case, the major part of it.
  4. They do not like nor understand stock or bonds of a fluctuating capital value. They have no place at home to keep bearer bonds.
- If, instead of issuing vouchers and scrip certificates for small amounts, the Government had stated that the Savings Banks and Joint Stock Banks were prepared to issue special war loan pass-books, and to receive sums of 1s. upwards, repayable at any time six months after the declaration of peace, or for periods of one year and multiples of one year—period to be fixed by depositor at time of deposit, interest to be at the rate of  $4\frac{1}{2}$  per cent. or any other

higher current rate—subscriptions of small sums on war loan account would have been greater than they have been. Under such a scheme, it might also have been provided that any depositor desiring to make a withdrawal before the expiration of the period for which the deposit was fixed, might at any time do so; but the rate of interest on the amount withdrawn would be adjusted to 2½ per cent.—the customary savings bank rate—for the twelve months prior to withdrawal. Alternatively, a scheme might have been arranged whereby a depositor received 3 per cent. interest on his minimum monthly balance, 4 per cent. on his minimum yearly balance, and 5 per cent. on his minimum balance for two or more years. One great truth always to be borne in mind by those arranging for the collection of small subscriptions on war loan account is that no great volume of money can ever be collected in small sums. Out of about £250,000,000 due to depositors in the Post Office and Trustee Savings Banks, only about £13,000,000 represents the aggregate of balances under £10, and about £25,000,000 the aggregate of balances under £20.

**WAR SAVINGS CERTIFICATES.**—These have been issued since 19th February, 1916 (price 15s. 6d. each), at first at any Money Order Office of the Post Office, now also at banks. Each certificate entitles the purchaser to £1 at the end of five years; meanwhile, the money will be repaid if required: 15s. 6d. during the first year, 15s. 9d. at the end of one year, and an additional 1d. for each succeeding month. Each purchaser receives a book, in which a receipt for the payment is inserted. It was later stated that, in order to meet the requirements of those who were able to purchase a considerable number of certificates at a time, certificates for £12 and £25 (purchase price £9 6s. and £19 7s. 6d.) would be issued. These £12 and £25 certificates are issued without books, the certificate itself taking the place of a book. The amount of certificates that any individual may hold is restricted to 500; purchase price, £387 10s.

No income tax is payable in respect of the accumulated interest on war savings certificates. At first, only people whose income did not exceed £300 a year could purchase these certificates, but this limit was removed on 8th June, 1916; and on the same day it was also announced that single certificates for £500, payable five years hence (purchase price, £387 10s.), would be issued to

meet the convenience of those who desired to buy 500 certificates at one purchase.

**TREASURY BILLS.**—On 13th April, 1915, the Treasury announced that, until further notice, Treasury Bills would be issued in amounts of £1,000, £5,000, and £10,000, drawn for three, six, or nine months from date of issue, at fixed rates of discount, which would be subject to variation from time to time without previous notice, the rates in force for the time being to be notified to applicants at the Bank of England. Bills for twelve months were later added to the scheme. It is, perhaps, worthy of note that Treasury Bills have been authorised as an investment for the money deposited in the Special Investment Departments of Trustee Savings Banks.

This departure of the Treasury from the old system of tender for bills deserves commendation. Applicants now know the exact rate of discount before application. The Treasury is able to regulate, to some degree, the rate of inflow of money by altering its rates from time to time.

The discount rates on these bills have, so far, varied as follows—

**TREASURY BILLS AT FIXED RATES**

Date of Fixing.	<i>Rates per cent. per annum :</i>			
	3 months.	6 months.	9 months.	12 months.
1915.				
Apr. 14	. . .	2 $\frac{3}{4}$	3 $\frac{5}{8}$	3 $\frac{3}{4}$
Aug. 9	. . .	4 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$
Oct. 27	. . .	4 $\frac{3}{4}$	4 $\frac{7}{8}$	5
Nov. 12	. . .	5	5	5
1916.				
Mar. 24	. . .	4 $\frac{1}{2}$	4 $\frac{3}{4}$	4 $\frac{3}{4}$
June 16	. .	5	5	5
July 14	. .	5 $\frac{1}{2}$	5 $\frac{3}{4}$	1
				6

The total amount of three, six, nine, and twelve months' Treasury Bills outstanding on 12th August, 1916, was £872,000,000.

**WAR EXPENDITURE CERTIFICATES.**—On 3rd June, 1916, the Treasury announced that as from that day until further notice, War Expenditure Certificates would be issued at a fixed rate of

<sup>1</sup> Sales ceased.

discount, which would be subject to variation from time to time without previous notice. The Certificates are issued in amounts of £1,000, £5,000, and £10,000, and are drawn for two years from date of issue. Particulars of the rate of discount for the time being in force is notified to applicants at the Bank of England. The Treasury later gave notice that from 26th June, 1916, these certificates would also be issued for amounts of £100 and £500. War Expenditure Certificates are, in effect, Treasury Bills running for two years. At first, they were issued at a price of 90 per cent., which price, on the basis of annual interest, yields the holder about £5 8s. per cent. per annum. Then, when the Bank Rate was raised to 6 per cent. on 13th July, 1916, the price of Certificates was lowered to £89. Up to 12th August, 1916, the Exchequer receipts from these Certificates amounted to £18,381,000. The issue of smaller Certificates now authorised will probably be freely accepted.

**EXCHEQUER BONDS.**—Early in March, 1915, the Treasury made an issue of £50,000,000 Exchequer Bonds in the form of five-year 3 per cent. bonds. The system of tendering without a minimum price was adopted, and the result was that the total applications amounted to £72,000,000, while the average price accepted was about £3 18s. The net Exchequer receipts were £48,000,000. On 16th December, 1915, the Treasury announced that Exchequer Bonds, carrying interest at £5 per cent. per annum and repayable at par on 1st December, 1920, would be issued in denominations of £100, £200, £500, £1,000, and £5,000. It was also stated that in the event of future loans (other than issues made abroad or issues of Exchequer Bonds, Treasury Bills, or similar short dated securities), bonds of this issue will be accepted, together with all undue coupons, as the equivalent of cash for subscription to any such loan. On 10th January, 1916, similar bonds were issued in denominations of £5, £20, and £50 at Money Order offices. Subscribers at their option may leave their bonds in the custody of the Post Office. It was later announced that applications for the small bonds could also be made at all the banking institutions in the country.

The issue of Exchequer Bonds repayable on 1st December, 1920, ceased on 1st June, 1916; but applications were still accepted for 5 per cent. Exchequer Bonds repayable on 5th October, 1919.

or on 5th October, 1921, at the option of the applicant. On 25th May, 1916, it was announced that Exchequer Bonds issued through the Post Office would continue to be 5 per cent. bonds, in denominations of £5, £20, and £50, maturing 1st December, 1920. Up to 12th August, 1916, the Exchequer receipts from the issue of 5 per cent. Exchequer Bonds were—

5 per cent. Exchequer Bonds, maturing Oct. 5, 1919	£30,542,000
5 " " " " Dec. 1, 1920	234,002,000
5 " " " " Oct. 5, 1921	50,568,000
<hr/>	
	£315,112,000

The aggregate sale of £5, £20, and £50 Exchequer Bonds up to 10th June, 1916, was £23,250,000, in number 710,000.

The new system of issuing Exchequer Bonds certainly meets a public demand; but the system requires improvement in that purchasers should be able to obtain the bonds immediately over the counter of post offices and banks, without awaiting subsequent delivery of the bonds. One difficulty in the way of this arrangement is that the first coupon is for a broken sum, but that might be overcome.

**MOBILISATION OF AMERICAN, CANADIAN AND OTHER SECURITIES.<sup>1</sup>**—In the House of Commons on 13th December, 1915, the Chancellor of the Exchequer stated that the Government were desirous of purchasing outright or borrowing certain American and Canadian dollar securities held by holders in this country, in order to use such securities for the purpose of steadyng the American Exchange. Preferably, holders of selected securities were invited to sell such securities to the Treasury at the current market price, the purchase money to be paid in five-year 5 per cent. Exchequer Bonds at par. Alternatively, holders who did not wish to sell outright were invited to pledge selected securities with the Treasury for a period of two years from the date of transfer, the lender to receive all interests and dividends paid in respect of them, and also, by way of consideration for the loan, a commission at the rate of 10s. per cent. per annum on the face value of the securities. The Government

<sup>1</sup> On 12th August, 1916, a second plan (Scheme B) was announced by the Treasury for the purpose of regulating the *Foreign Exchanges*. The Treasury asked for the loan (not the sale) of various Argentine, Canadian, Danish, Dutch, and Swedish securities; and offered very favourable terms to lenders.

reserved the right to sell borrowed securities under certain conditions. This reservation has not met with the approval of holders. A few days later it was stated that, in view of the time required for dealing with the securities being tendered by insurance and trust companies, the Treasury were not in a position to consider offers from individual holders before 1st January, 1916.

No figures have yet been published of the amounts of American and Canadian securities sold or lent to the Treasury under the scheme; but the amounts, particularly the sales, are known to have been large. By selling the securities in New York, or pledging as collateral for loans, the Treasury has been very successful in maintaining the American Exchange at about 4·77. In order that the Treasury shall be kept well supplied with an inflow of the desired securities, the Chancellor of the Exchequer on 27th June, 1916, moved a new clause to the Finance Bill, authorising the charge of an additional income tax of 2s. in the £ on income derived from securities which the Treasury are willing to purchase.

Some economists have expressed the opinion that, instead of disposing of large amounts of foreign investments, the proper way to steady the exchanges is to diminish our imports and increase our exports. This is obvious, but it is equally obvious that present conditions of the war render the complete success of such a method a matter of very serious difficulty. Two other factors that have helped to maintain the American Exchange have been the great exports of gold sent to the United States from England, which during 1915 are said to have amounted to about £50,000,000, and the establishment of credits in New York by the banks of the United Kingdom.

**THE MULTIPLICITY OF LOANS.**—When one analyses the war finance of Great Britain since the commencement of the war, one is struck by the variety of forms of borrowing, and the immense amount of clerical labour and of stationery that has been used in the issue of the loans and will still be required in the future management of the loans. The greater part of the clerical labour and stationery could have been avoided if the Government had made use of a pass-book system for the collection of loans. Some such system as the following might have been adopted—

1. The Government should advertise continuously as follows  
“The Government are prepared to receive on War Loan deposit,

until further notice, any sum or sums of money, from 1s. upwards, at 5 per cent. per annum interest, to bear any other higher current rate, to be repayable at any time after the declaration of peace on six months' notice by either side, or at the end of one, two, three, four, or five years from date of deposit, if period fixed by depositor at time of deposit. The deposits will be received by any bank or any Savings Bank on Government account, and a special pass-book will be issued to the depositor. Further deposits may be made as desired, with the same pass-book.

"2. Any part or the whole of war loan deposits will be transferable, but will remain war loan deposits, whoever the holders.

"3. War Loan depositors will be able to obtain at any time temporary advances to meet unforeseen calls, to an extent not exceeding their subscriptions on Government account, at a rate of interest 1 (or 2) per cent. higher than the Government current War Loan rate."

It would have been a very simple matter for every bank to keep a special War Loan ledger, and to receive periodically from the Paymaster-General one cheque for payment of interest on War Loan accounts. The present coupon system entails an enormous amount of labour on the banks. The crediting of interest to accounts is comparatively a very simple matter. In all schemes for collecting loans by the pass-book system for Government account, there is every reason for the willing and patriotic co-operation of the banks, once the banks thoroughly understand the position. Their deposits, as a whole, cannot decrease, though some of the banks after Government disbursements may get more than their share of the credits of other banks, but this happens continuously in peace times.

### VIII. WAR FINANCE AND TAXATION

*What proportion of the National Income can be obtained in Imperial and local taxes?*

It is implied in the question, that the taxes to be considered must be levied according to equity, without reducing to any

marked degree the efficiency of the taxpayer, and without creating a sense of intolerable hardship.

A Chancellor of the Exchequer may feel himself safe in imposing penal taxation on a small minority (*e.g.*, the extra 2s. in the £ income tax on American Dollar Securities which the Treasury is prepared to buy); but such an impost will hardly be levied for revenue purposes alone. The principle is in itself unsound, and is capable of dangerous extensions; teetotallers might like it applied to income derived from beer and whiskey; land-nationalisers would readily put a special tax on incomes derived from land; Puritans would penalise incomes derived from the Turf or from music-halls.

It is clear that the national income, measured in money, has increased enormously through the lavish expenditure of borrowed money; possibly, as Sir George Paish and Professor Pigou suggest, from £2,300,000,000 to £3,000,000,000. Therefore, a larger percentage can be extracted from the £3,000,000,000 than would have been extracted from the £2,300,000,000, just as the sudden rise of an individual's income from £2,300 to £3,000 a year would give him a larger surplus to spend on superfluities. How far the *net* income has increased, of course, is a different matter; and a large discount must be allowed for the rise in prices. Yet this rise in prices is itself partly due, as many economists have pointed out (*e.g.*, Professor Ashley in *The Times*) to the increased earnings and spendings of large sections among the working classes.

If, then, a national income of £2,300,000,000 could bear a total taxation—national and local—of, say, one-fifth or £460,000,000, an income of £3,000,000,000 could probably bear a tax of one-quarter, or £750,000,000, for taxation of all kinds (including local rates). But this assumes a rigorous application of the income tax to all incomes above the poverty line, the details of which will be explained later. Even now, a man with £100,000 a year pays 41½ per cent. in income and super taxes, in addition to the taxes which he shares with those who have smaller incomes, so that an average taxation, including all other direct and indirect taxes and local rates, of 25 per cent. does not appear excessive.

Now, although the national income before the war was officially reckoned at £2,300,000,000 (and Mr. Lloyd George made it a hundred millions more), the actual income "on which tax was

received," according to the most recent returns,<sup>1</sup> was only £791,000,000, to which £160,000,000 must be added to find the "taxable" income.

Surely it is absurd to speak of the Income Tax as the sheet-anchor of the Exchequer in time of war and yet to leave two-thirds of the national income free of tax! Something, indeed, was done in September, 1915, when Mr. McKenna lowered the limit of total exemption from £160 a year to £130, and reduced the abatement from £160 to £120; but the value of this reform was largely diminished by two provisions which accompanied it. The application of the tax to artisans' incomes was postponed until the beginning of the next financial year, and the collection was to be made quarterly, and by individual return instead of by direct collection at the time of payment. These two concessions are logically indefensible. Collection at the source is so much better than other methods, that it should be adopted whenever possible. In the case of wages, it is peculiarly applicable: already, through the Insurance Act, both employers and workmen have grown accustomed to weekly deduction. With an income tax, the machinery may be even simpler and cheaper, for no cards or stamps need be used; nothing is wanted except an additional column to the weekly wages sheet showing the exact number of pence deducted from each employee, then a cheque for this total to the Surveyor of Taxes and his receipt on the wages sheet itself, and the thing is done; while, in order to bring home to the taxpayer the amount of his contribution, printed statements showing its amount should be handed to him.

The advantages of collection through the employer are many; it is the cheapest way of collecting any tax: the workman will not be worried by having to make out a return, or to keep stamped cards or other evidence of payment. In fact, he may be relieved from all responsibility; and the employer, in return for the liability thus imposed upon him, should be entitled to a commission or to the repayment of his expenses in collecting money for the Exchequer. It is essential in a tax of this kind to treat each week as a complete tax period, and there is the less difficulty about the plan, since practically all working-class budgets are based on the

<sup>1</sup> Annual Report of the Inland Revenue Commissioners for 1913-14. Ed. 8116.

interval between one pay day and the next: even where wages are paid fortnightly, the employer has to advance nearly one-half at the end of the first week. But since a weekly collection would yield a larger sum than the same percentage on a whole year's earnings, the poundage levied should be smaller than that on whole-year incomes; or, more simply, the tax should begin at a slightly higher point (*e.g.*, tax begins at £75 a year, the wages-tax should not begin until 30s. a week, which is £78 a year, or perhaps not until 31s. or 32s. a week). The allowances for children and life insurance may be arranged very easily; the workmen's wages will be "deemed," as lawyers say, to be so many shillings a week less. The £25 allowances for children, it should be noted, make the real minimum for income tax, taking the normal family of wife and three children under 16, not £120 but £195. Consequently, the limit for a bachelor may safely be brought down to 30s. a week; then, if 5s. a week be allowed for each child, the normal workman will only begin to pay a tax when his wages exceed 45s., or, if 7s. 6d. be allowed, when they exceed £2 12s. 6d. At present, the lowest rate of income tax is 2s. 3d. on earned incomes below £500 a year; but since twenty-seven pence, when applied to small sums, is an awkward figure, we suggest the simpler and smaller charge of one penny in the shilling (1s. 8d. in the £1) as the charge to be deducted from wages. In order to fit in this wages tax with the *présent* system, it would be necessary to lower the point of total exemption from tax in respect of all other incomes; and, of course, the charge per £ must be lowered at the same time: in fact, a new step or stage should be added to existing scale; thus—

Income.	Abatement.	Earned Tax.	Unearned Tax.
£75 to £250	£75	1/8	2/-
£250 to £500	£120	2/3	3/-

It may well be doubted whether the concession of £25 per child, regardless of income, is a scientific way of dealing with the question: a definite percentage off the income assessable, say, 15 per cent., with a minimum of £15 and a maximum of £30, would be more equitable; while there need be no limit of income at which the right to the £30 would cease.

In fact, while an income tax is, in theory, as much the fairest

of all taxes, as it is the cheapest to collect, our English income tax fails in many ways to reach the ideal. In the lower stages, thanks to abatements and exemptions, it approaches equality of sacrifice, but anomalies begin when the £500 point is passed and become acute after £700. There is no reason why the abatements should stop suddenly at £700, or why the separation of married persons' incomes should stop suddenly at £500. A man with the normal family of three children and an income of £675 a year, pays on £550; if £75 be added to his income, he must pay on £750.

Under our existing system, the taxation of commodities imposes a serious and unjustifiable burden on working men with small wages and large families, on widows (and the sad total of war-widows grows daily), and on aged or infirm persons. At the same time, there are many people and families well above the poverty line who do not feel the burden of taxation, though they suffer, like everyone else, from the temporary rise in prices; indeed, a considerable proportion of the national income goes to people who do not pay any tax on it, but could well afford to pay something. Further, the tax could be collected from this income without any new or expensive machinery, and without hardship to the taxpayers. If it be objected that taxation is already reflected in the rate of wages and that working men will resent a visible income tax, the answer is that appearances should be made to conform to realities, and that representation implies taxation. It is not expedient that the tax which depends more than any other upon national policy should only be paid by a small minority of the electors, who ultimately decide that policy. If it be objected once more that the majority of electors really do not trouble their heads about that national policy, may it not be because they do not see how that policy affects them? They do not show the same indifference if mistakes in municipal policy cause a rise in their rates and their rents.

Our *Questionnaire* invited correspondents to "discuss an increase of income tax for 1916-17, say, to 3s. on earned income and 5s. on unearned income." Mr. McKenna's Third Budget has now raised the income tax very nearly to the figures and in the proportion suggested, and, as modified by debate in the House of Commons, the rates are as follows—

Income.	Earned.	Unearned.		New Scale.
		s. d.	s. d.	
Under £300	2 3	3 0	3 0	
£300 to £500	2 3	3 6	3 0	
£500 to £1,000	2 6	4 0	3 6	
£1,000 to £1,500	3 0	4 6	4 0	
£1,500 to £2,000	3 8	4 6	4 6	
£2,000 to £2,500	4 4	5 0	5 0	
Above £2,500	5 0	5 0	5 0	

The revised scale has been generally accepted as reasonable, but in the course of our inquiry it was found that correspondents had begun to ask whether differentiation had not been carried too far. Sir Edward Brabrook writes: "When income tax was imposed in 1842 by a temporary Act which has been continued ever since, it was at a flat rate of 7d. in the £; and beyond an exemption for small incomes, and another for the stock of small friendly societies, it was made to apply to all alike. Since then, many attempts at differentiation have been made, all from an excellent motive, that of removing apparent hardships; but I question whether it would not have been better to have kept to the principle of the original Act. The proposal to increase the income tax to 3s. on earned income and 5s. on unearned income carries the differentiation still further. I think the allowance for small incomes should have been made in the form of an exemption of equal amount for every person taxed (e.g., suppose that amount to be £100, tax a man with £200 on £100, with £2,000 on £1,900, with £20,000 on £19,900, and so on). The present graduation makes very inconvenient jumps. With regard to the tax on earned incomes, there seems to be no reason why it should not be levied on weekly wages, as much as on salaries, with the like exemption where the income is small."

In the *Economic Journal* for March, 1916, Professor Foxwell protests emphatically against using the word "unearned" at all, and points out that most income thus unjustly stigmatised is, in fact, the result of savings, and this, moreover, when saving is a patriotic duty. Professor Kirkaldy joins in the protest. The increased income tax, he argues, on incomes which have been swollen by the war conditions, does not adversely affect the individual payer. But there are people whose incomes have decreased, and they feel the burden of the higher tax severely. "Is it not time," he asks, "to do away with the distinction between so-called unearned and earned incomes?"

It is probable that, on the whole, earned incomes (especially wages and the smaller salaries) have risen in sympathy with, though not in proportion to, the rise in prices. "Unearned" incomes, on the other hand, are less elastic. It is true that the dividends paid by shipping, armament, colliery, and other undertakings engaged in war work have greatly increased; but the yield of those securities preferred by the ordinary investor—railways, banks, brewerics, gas companies, etc.—have actually decreased, and the rents of house property have not risen. In cases where profits have risen in any marked degree, the Chancellor of the Exchequer makes himself a partner to the extent of 60 per cent. of the increase.

*Indirect Taxation.* Since our investigation for this year began, Mr. McKenna has introduced his second War Budget (4th April, 1916), and has extended and developed the existing tax system with great boldness. His proposals met with almost unanimous approval, yet a criticism of a constructive kind is still possible. To give an instance: the old duties on motor-cars were based on an unscientific scale, and the new duties of 8th April (which doubled most of them and trebled the rest) only accentuated the anomalies. These increases were abandoned on 21st June in favour of a duty of 6d. a gallon on petrol used for motor-cars, with a rebate of one-half for doctors' and veterinary surgeons' cars; while no addition at all was made to the wholly inadequate taxation paid by the owners of motor omnibuses and lorries, which throw so heavy a burden on the ratepayer by destroying his roads. The existing scales for taxing motor vehicles of all kinds should be entirely overhauled. The duties on private cars might be fixed by a combination of real horse-power (*i.e.*, not the obsolete formula of the Royal Automobile Club) and on weight: say, half a guinea per horse-power after the first 5, and 5s. per hundredweight after the first half-ton. A similar charge—though on a smaller scale—perhaps half—should be made on all other motor vehicles without exception. Then, since it is the use and not the possession of motor vehicles which throws such a heavy expenditure upon the ratepayers in repairing the public roads, the old petrol duty should be doubled or trebled. It is highly doubtful if any exemption from these imposts ought to be allowed, whether to doctors, taxi-cab proprietors, or omnibus companies; no one, so far as we

are aware, has suggested that Messrs. Lyons, Ltd., or the A. B. C. should be exempted from the tea and sugar duties, and the big companies who cut up our roads are quite able to pay their share of the general taxes. A very large sum, perhaps from £3,000,000 to £5,000,000, might be obtained every year from the taxation of commercial motor vehicles.

An addition to one well-established tax was confidently expected in the last Budget. Mr. Lloyd George's big addition to the beer duty had changed the balance of taxation in favour of the more potent beverage, and it was generally thought that Mr. McKenna would redress that balance by a large increase in the duty on spirits. Apart from an addition to the spirit duties, there is, in our opinion, little scope for the tax-collector in articles of consumption; and for any substantial addition to the national revenue we should rely upon the income tax. But that is more properly treated under a separate heading.

Several other sources of revenue were hinted at in our *Questionnaire* (e.g., "on advertisements, recreations, and transactions, also higher postal charges"). For the first time, recreations, as such, were brought under taxation in the last Budget; Mr. McKenna's proposals met with approval in principle, but with opposition in detail. As is, perhaps, inevitable in the case of fiscal novelties, the theory of such imposts had not been worked out in advance. If a Chancellor of the Exchequer turns his attention to cinemas, music-halls, theatres, and football grounds, should he extract his tax from the proprietors or lessees of those places of recreation, leaving them to recoup themselves by higher charges for admission, or should he extract a tiny sum from each patron of the entertainment? Mr. McKenna chose the second plan. The choice may have been inevitable if it was desired to tax all entertainments in the same way; but on some grounds it must be regretted. The machinery of taxing tickets is costly and wasteful, and it is by no means certain that an *ad valorem* tax is either the fairest or the most remunerative. Some things, such as tobacco and spirits, are excellent fiscal subjects, just because they cost little to produce. In the same way, cinemas or "picture palaces" are good subjects for taxation, just because they are cheap; but the proposal to put a halfpenny tax on twopenny tickets roused a storm of protest from critics who talked of a

25 per cent. tax and complained of the much smaller percentage levied on half-guinea theatre stalls. It would have been more economical to make the proprietors of cinemas and theatres pay a direct tax proportioned to the size or seating accommodation of the house, or to the number of performances, or perhaps to the size of the town where it is situated. The principle adopted by Mr. Balfour as the fiscal basis of his Licensing Act in 1904, viz., that new licences should pay a heavier tax than old licences, was a sound one, and is capable of considerable extension, especially if it be combined with a restriction of numbers.

A proposal was made, but soon dropped, to tax railway tickets costing more than 9d. for a single journey. This tax was open to the serious and, indeed, fatal objection that it proposed to increase certain charges which were already excessive, and not to increase certain other similar charges which were either very moderate or absolutely unremunerative. If the Government had wished to tax railway shareholders, and aimed at that part of the passenger traffic which is really profitable, there was much to be said for the proposal, for the long-distance trains are perhaps the only kind of passenger traffic which pays. But, in the first place, the Government is, for the duration of the war, itself the sole shareholder, and takes all the traffic receipts, subject to its agreement with the companies; in the second place, the proposal was one solely to tax travellers; and, in the third place, if any tickets were to be taxed at all, the short-distance tickets and those issued at less than the Parliamentary rate of a 1d. a mile offered the fairest target to the Chancellor. Is there any reason, for instance, why a passenger should be carried from Waterloo to Clapham Junction at the rate of a halfpenny per mile (or 2d.), when for longer distance he is made to pay a penny a mile? By a stroke of the pen, the Board of Trade could have raised all these small fares to a remunerative level. Instead of doing this, however, the Government has, in effect, raised the long-distance fares by abolishing excursion, market, tourist, week-end, and return fares, thus inflicting very serious hardships upon persons whose home ties or the calls of business compel them to travel long distances.

The restriction of consumption by Government action is a very delicate matter. If the restriction is effected by addition to the

price of a commodity through special taxation, the hardships caused thereby will be most felt by the very poor, as we have seen from the complaints made on behalf of old-age pensioners. It is doubtful whether restrictions on tea-drinking are wise, for people may well drink far more injurious beverages, and restrictions on the consumption of sugar (a substance whose real food value has only been discovered in recent years) are likely to be inexpedient from the point of view of the national health, though considerations may be urged upon the other side on different grounds as an emergency measure.

## IX.—ECONOMIC CONDITIONS AFTER THE WAR

These conditions may be discussed under four heads, viz.—

(a) The state of production and trade; (b) the relation of labour to capital; (c) the standard of living; (d) rate of increase in national wealth.

### THE STATE OF PRODUCTION AND TRADE

Immediately after the declaration of peace there is certain to be dislocation in production and trade, and disturbance in the labour market. After the transition to peace conditions is complete, the state of production and trade may be as follows: The supply of loanable capital will probably be restricted for some time after the war; but the extent of the restriction will be less serious if "war saving" develops into a habit. In any case, capital will be relatively scarce, since the demand for it will be greater than in 1913. This will not wholly be an evil in so far as it will tend to diminish the magnitude of a possible boom in trade due to a sudden rush of demand, and the inevitable collapse thereafter due to the usual over-calculation by each person engaged of his share in the resultant good trade. The engineering and building trades are likely to be exceedingly busy. Replacement and repairs to machinery, plant, and buildings neglected during the war, shipbuilding, municipal developments, and the building of new houses, will give ample employment to these trades. The rebuilding of Northern France and Belgium will provide a further demand for raw materials and finished goods from the United Kingdom. But the more evenly the demand can be spread over

the next few years, the better it will be for all concerned. Public bodies and others should save up as much of their demands as possible, in order to satisfy them when prices have come down to a more reasonable level, and loanable capital is more plentiful and consequently cheaper.

There will be a shortage of certain descriptions of fixed capital, for example, ships, owing to the destruction of some and to the rapid depreciation of others during the war. Many ships have been overdriven, and have not been repaired when repair was needed; hence the life of shipping as a whole (apart from losses) has been shortened (*e.g.*, a ship in 1914 had an expectation of a life of four years, but that is reduced to two and a half years, hence it is out of efficient service at the end of 1916 instead of in 1917). Again, certain kinds of machinery producing goods for which the demand fell off during the war will have depreciated through idleness. Machinery generally will not have been renewed and repaired as effectively as in peace times. A certain amount of the new "war machinery and buildings" may be convertible to peace production, but a vast amount will be useless. Peace-production machinery which has been converted into war-production machinery will have to be altered and converted back again, also many large buildings, such as hotels, which have been taken over for war purposes. The cost of such conversion, of course, represents a corresponding loss of capital. The steady depreciation in dwelling-houses, warehouses, roads, etc., has gone on during the war, and little has been done in the way of renewals. All these factors will tend to retard production after the war, unless a greater productivity is obtained from the existing fixed capital than was the case before the war. Many valuable lessons have been learnt during the war as to the possibility of more effective administration; and co-operation and amalgamation into larger units might do much towards getting the best out of existing fixed capital.

One usual result of war is that the rich, as a class, become richer relatively to the poor. Many people make their fortunes out of war requirements; and in certain trades, such as shipping, dividends have risen greatly. But, on the whole, the ordinary investor has not gained by the war; in fact, he has lost both in capital and interest.

As Sir Edward Brabrook writes: "The Legislature has done much

to equalise the conditions by imposing heavy taxation on the wealthier classes, and many comparatively wealthy persons will be poorer after the war than they were before; but those consequences are not results of the war, so much as consequences of the attempt to neutralise its results."

J. S. Mill, in a well-known passage (Book I, Ch. V, Sect. 3), discussed the effect of war upon wages and profits. The opinion that war means great gains for capitalists and a loss to the labouring classes during hostilities is based on the experience of the Napoleonic wars; but, as Mill points out, in that contest, Great Britain employed comparatively few additional soldiers and sailors of her own. In France, at that time, wages "did not fall, but rose; and employers were not benefited." Production in Great Britain will have to make good the losses of war and the dislocation of industry upon the return of peace. Changes in the distribution of wealth will be inevitable; taxation is unlikely to intercept all war gains—so far, it has only attempted to reach a part of those upon capital, but has not touched such as depend upon personal exertions (whether from enterprise or labour). Therefore, the war will leave some considerably better off; while, conversely, many investors and other owners of capital will be considerably poorer, often in their gross incomes and still more in the net income after deduction of the increased post-war taxation upon those incomes.

To what extent has the total volume of labour suffered by the war? The war will take a great and lamentable toll of lives; but the bulk of the men now under arms will return to this country, to their former employment, with materially improved constitutions as a result of the open-air life and exercise. Will this gain balance the loss of life and permanent invalidism? It is possible there may be an increase for some years after the termination of the war in the rate of emigration from the United Kingdom.

Many people think that the open-air life at the Front is unsettling thousands of soldiers, who will demand farms at home, or emigrate to the Colonies. Possibly, on the other hand, a winter spent in the trenches may make them anxious to spend the rest of their life under a roof. It is probable, too, that the number of women employed will be larger, though many of the new "war-workers" may go back to domestic life. The state of production

is bound up with the foreign trade of the United Kingdom. The volume of our export trade after the war will largely be determined by the cost of production in the United Kingdom, which, in its turn, is largely determined by the course of prices of general commodities. After the war, present prices are likely to fall, but will probably not approach pre-war prices until several years after the declaration of peace. There is no reason to anticipate a great mass of unemployment after the war. The shortage of labour during the war has been largely made up by the re-entry into occupation of married women, young children, and old men; and these three classes will probably again be withdrawn from industry. The increased demand for products will probably immediately make itself felt directly peace is assured, but the Army can only be very gradually reduced until such time as peace treaties are signed and possibly certain guarantees fulfilled. The disbandment of the Army, if carried out with reasonable care, and having due regard to the special requirements of the labour market, ought not to cause any serious unemployment. The Army authorities should, as far as possible, work hand in hand with the Labour Exchanges, Employers' Federations, and Trade Unions; and by some re-arrangement it should be possible to disband the Army not in companies and regiments, but in accordance with the civil demands for their labour.

Furthermore, it is quite possible this opportunity may be seized to extend considerably the period of education of the younger generation. In the long run, it would be far cheaper to keep children at school to an advanced age than to pay out large sums in unemployment benefits, or in keeping an idle Army undisbanded for an unnecessary time: because, in the one case, there will be produced more efficient labour out of the younger generation; in the other case, enforced idleness tends to destroy the efficiency of adult labour.

To some extent, all speculation as to what conditions will prevail after the war partakes of the nature of prophecy, yet there are certain causes already at work which must have their effects in the future. War debts are being increased literally every day. "Sooner or later these debts must be faced, and the interest on a funded debt will impose a heavy burden on future industry for many years to come, while unfunded debts or excessive issues of

paper money will probably be dealt with by the flotation of a loan when the time is judged opportune. Here, again, there will be a further charge for interest. It may be that where the credit and financial systems have become highly artificial, the position cannot be adjusted without a commercial crisis; and, if so, the losses through a temporary collapse of credit, caused indirectly through the war, must be added to the more immediate war losses."<sup>1</sup>

Other discouraging factors must be reckoned with, such as the dislocation of production which arises upon mobilisation and again upon demobilisation. If the industries of a country were organised efficiently before the war, the diversion of demand and contraction of production usually, if not indeed inevitably, involve producing at a less advantage than before. Again, the closing of trade routes forces recourse to substitutes for some commodities previously used, and the substitutes are frequently either inferior, or else more costly. War, in fact, removes many of the advantages which previously accrued from territorial division of labour. Moreover, an allowance must be made for the position of tariffs after the war. Tariffs had something to do with causing the war, and are likely to have some share in the ending of it. Clearly a state of international relations in which, after a political peace, a war of tariffs was waged, would be yet another element to be added to the long list of war losses, in so far as trade was diverted into artificial channels beyond such a degree as its course was facilitated by lesser Customs duties amongst friendly nations.

On the other side, some more hopeful factors may be perceived. "War is enforcing a return to a more Spartan *régime*, and habits of economy are perforce replacing those of profusion. But, as these habits become established, their influence will persist when the war is over. Hence resources will be derived from this source, partly to pay interest on war debts, partly further to supply the new capital which will be required in large amounts to replenish working capitals and to replace buildings, plants, and means of transport which have been destroyed during hostilities. Thus there are indications that the war itself is calling into existence a fund from which some of its own waste will be repaired. War and luxury are alike unproductive expenditures; but, while the latter has been continuous, the former outlay is compressed into a

<sup>1</sup> W. R. Scott, "On Repairing the Waste of War" (*Scientia*, July, 1916).

comparatively brief period, thereby anticipating at one bound the disbursement upon luxuries during many future years.”<sup>1</sup>

Will the efficiency of labour be greater or less? The experience of war workshops, where new and unskilled operatives have turned out more than “skilled” men used to do, has proved that a reasonably large output per head was often not obtained before the war. The skill of these new workers will remain as a potential national asset. Again, it is to be hoped that the nations of Western Europe will respond to Nature’s demand for population; and that in this case, as in that of previous wars, there will be an improvement in the birth rate. Thus the terrible waste of humanity may be repaired, in the first instance, by continuing to use, as far as necessary, the reserve of labour called up by the war, and, later, by a larger proportion of births and a reduction of infantile mortality.

#### THE RELATION OF LABOUR TO CAPITAL

Immediately after the war, there are likely to be very strained relations between labour and capital. High prices of some of the necessities of life for some time after the war, reduction in wages (though, generally speaking, not to pre-war level) after appetites have been whetted by high wages, and display of wealth by those who have made great profits out of conditions created by the war, are factors making for serious internal trouble.

On the other hand, the probability of greater production than before the war, a greater willingness to work (for the war has awakened people out of their growing antipathy to work of all kinds), and the likelihood of a reduction in price to pre-war prices of certain imported foodstuffs and raw materials, in particular, wheat, are factors making for eventual peace in the labour world. It is the transition period wherein trouble lies. Perhaps, also, it will be found that the understanding and sympathy between the various classes will be found to have considerably broadened, consequently money wages will start on a high level; and if there is a boom in trade immediately after the war, prices will remain high, labour will not be over-abundant, and during the boom there will not be any necessity to reduce wages materially—except, of course, where extraordinary wages may have been paid in munition factories.

<sup>1</sup> W. R. Scott “On Repairing the Waste of War” (*Scientia*, July, 1916).

After the boom is over, a period of years of constantly-falling prices corresponding with the deflation of currencies throughout the world may be expected. Now, in periods of falling prices, it usually happens that prices fall more rapidly than wages, and that, although the money wages of the working-man are falling, his real wages during this period will be increasing, and this fact is very easily brought home to him. On the other hand, a period of falling prices means a period of bad times for producers, who, in addition, will be overburdened with taxation. Acute labour troubles are not likely to arise during the period where the real wages of the working-man are increasing and the masters are doing very badly.

We think, however, that this opportunity should be seized to bring home to the working-man that any substantial increase in his real wages must come out of the increased productivity of his labour, provided that he can participate in the fruits of such a productivity. An unhappy fallacy has obtained wide credence in the labour world (*i.e.*, the belief that there is only a limited quantity of work to go round); so that if A and B do less, there is more for C. Of course, in any one day, in any given workshop, that may be true; but for a longer period and over a larger area, it is just the reverse of the truth. What each workman gets in return for his work is a share in the output of all other workmen; so that the real result of A's and B's slackness is that, in the long run, there is less for C.

*Enterprise.* All the considerations which apply to labour apply equally to the *entrepreneur*. A great number of the most energetic captains of industry in the period before the war and a considerable number of the prospective captains of industry will either have been killed, permanently incapacitated, or will emigrate after the war, or will enter into some less productive or more agreeable occupation in life than those involved in managing a factory or conducting a large business. For the next few years, too large a proportion of industry will have to be conducted by men over military age, that is, at an age when a man's judgment and experience tells more than his initiative. On the other hand, the initiative of young officers who come back from the war will be greatly increased. They will be able to do what they could not have accomplished ten or fifteen years later if there had been no

war. Again, much of any possible loss in enterprise and initiative may be avoided by judicious amalgamations. There is always in competition a certain overlapping of initiative and enterprise; and in many trades the unit of the enterprise might with advantage be made somewhat larger, but not too large, because the incentive which keen competition affords must not be lost. The stimulus which invention has received during the war may increase invention after the war.

#### THE STANDARD OF LIVING

It is inevitable in war time that energy which should go to the raising of the standard of living and the further accumulation of national wealth is expended and consumed on the battlefield. Moreover, war expenditure creates a fictitious prosperity. Immediately after the war, the standard of living of the working classes is likely to be lower than before the war, owing to a fall in real wages. The standard of living of people with fixed incomes is almost certain to be lower owing to the great increase in taxation. It is probable, too, that the capitalist and *entrepreneur* class will suffer a lowering of their standard, as a result partly of taxation and partly of the bad times which will come during a period of constantly falling prices. This statement assumes that the bulk of the burden of taxation will fall on the proper shoulders. If there is any change in our fiscal system in order to divert this burden, of course, conditions will be entirely different; but we assume throughout that there will be no undue Governmental restrictions, or interference with the organisation of trade. Luxury had spread so much in recent years, that reduction in the standard of living of the wealthier classes is not a matter of great moment, and probably they have already during the war become quite accustomed to it. It seems probable that it will not be less than it is now during the war, providing the war comes to an end within the present year.

The increased taxation, heavy though it is, may yet be borne without an intolerable hardship if there is a corresponding increase of production. Moreover, luxuries may be curtailed without affecting the real standard of living. The luxury and service trades are very highly developed. Some years ago, Professor Marshall estimated that £100,000,000 was annually spent by the working classes in luxuries, and £400,000,000 by the rest of the population.

Although a great addition to taxation is admittedly a crushing burden to States whose productive power cannot expand, yet in progressive manufacturing countries such as Great Britain, production can be increased almost indefinitely by greater efficiency and greater application and improvement of machinery. Increased taxation is like a task master. It compels people to work harder, to be more inventive, and to introduce improvements in manufacturing. It has been said that the great taxation following the Napoleonic wars made England the greatest industrial and the wealthiest nation in the world, owing to necessity stimulating both industry and invention.

#### RATE OF INCREASE IN NATIONAL WEALTH

After making allowance for the great loans to her Allies and Colonies, it cannot be said that the war has made any great inroads into the total capital wealth of the United Kingdom, except for the element of temporary depreciation. If she had not had to make loans to her Allies and Colonies, there would have been no necessity for the United Kingdom to sell any considerable amount of her foreign investments.

Looking at war expenditure from a national standpoint, it may be said that part of it goes in the form of profit to manufacturers and others engaged on war materials, and another part in wages to operatives, and is not, therefore, altogether lost to the nation; part of it is represented by ammunition and other Government stores which the community has produced by working more strenuously and by overtime at the factories and mills; and part of it is represented by ammunition and other Government stores, the energy to produce which has been diverted from productive industries. It is for this latter diverted energy, owing to war conditions, that the nation has really to pay the bill. As far as we can see at present, when the war is over the productive power of the United Kingdom will be as great as it was prior to the war, though there will necessarily be many neglected repairs to be undertaken.

#### PAYING FOR THE WAR. LOANS AND TAXATION

In our last year's report, we declined any attempt to fix the proportion between the cost of war which should be defrayed by

taxation and that which should be met by borrowing. We agreed, however, with Professor Bastable's opinion that the need for immediate taxation was great; and in the Budget of 21st September, 1915, this and other matters alluded to in last year's report were consistently advanced. Since that time, Mr. McKenna's Budget of 4th April, 1916, has added enormously to taxation, raising the full rate of income tax to 5s., though a large majority of taxpayers will pay on varying lower rates down to 2s. 3d. in the £. The Budget of September, 1915, extended the income tax to incomes between £130 and £160, which had long been totally exempt, and reduced the maximum abatement to £120. In theory, the tax was applied to wages above 50s. a week; but, in practice, wages still enjoyed an exemption until the Budget of April, 1916. The Excess Profits Tax was raised, in 1916, to 60 per cent., with an estimated yield of no less than £86,000,000; and altogether, Mr. McKenna reckoned that just over £500,000,000 would flow into the Exchequer.

This vast sum, indeed, is not wholly tax revenue; allowances must be made for receipts such as the Suez Canal dividends; the large gross receipts from the Post Office are really a trading turnover, and should not be included in the national balance sheet; and the excess profits tax, although not termed a "war profits" tax, is clearly an impost which must lapse when the war ends. Nevertheless, the comparative ease with which this vast sum is being collected demonstrates both the wealth of the United Kingdom and the soundness of its financial system. No other belligerent attempts to pay even the interest on its new war debt out of revenue; all borrow and borrow again.

It must not be supposed, however, that the money cost of the war is the same thing as its real cost; there are other costs and sacrifices which may be as serious or even more serious than the money cost. In a recent monograph,<sup>1</sup> Professor Edgeworth has analysed the real cost of the present war. This conception includes (1) the nominal cost, in the sense of what is usually termed war expenditure; (2) the loss of national income consequent on war; (3) the waste of "living capital" (*i.e.*, the loss to the country by the death or disablement of its citizens), whereby the national production is diminished by the amount which these citizens would

<sup>1</sup> *The Cost of War* (Oxford University Press, 1s.).

have added. Hitherto, the calculation has been confined to the losses of soldiers, but German piracy by sea and air has added the new casualties of non-combatants. Something, perhaps, should be allowed on the other side for cases where the man's efficiency has been increased by military training or service, but there may also be cases where special skill has been lost during the service.

Let us consider, first, the nominal cost, which may be taken at some £2,000,000,000 a year, perhaps one quarter representing advances to our Allies and Dominions which should be recoverable—to a large extent—after the war. So vast a sum obviously cannot be obtained by taxation alone, for it is at least two-thirds of our national income at its highest estimate. The older economists, especially Ricardo and Adam Smith, held firmly that the whole war bill should be paid by taxation as it was incurred.

Ricardo's reasons were (1) that the payment of the whole cost by taxation tends to prevent a country engaging wantonly in expensive wars and, when the war has been begun, acts as an incentive towards the conclusion of peace; (2) in a country with a large debt, the high consequent taxation makes contributors try to shift the burden of their taxes upon others or (failing that) to emigrate to another country; (3) prices under a system of borrowing are artificial, whereas, after a war which had been financed by taxation, they would return immediately to their natural level. Further, when the cost is raised by immediate taxation, the contributors, so Ricardo thought, will make a great effort to save, whereas if the whole is borrowed they will think that they need only save just the amount required to pay interest on the war debt. These considerations, perhaps, have lost some of their old force: the emigrant, for instance, will find it difficult to escape taxation anywhere, and he may have to pay a double income tax on any property he leaves behind. Ricardo, it will be seen, does not lay stress on one consideration which appeals to modern economists with a greater experience of Government methods of spending (*i.e.*, that money raised by a loan is more likely to be spent wastefully than money raised by taxation).

In the present war, control of public expenditure is less rigid than in the past. Thus, an appearance of great industrial prosperity is created, wages rise rapidly, shops which cater for war-workers do a roaring trade, and the profits spread in a

widening circle. For this reason, taxation can be borne more easily now than it will be after the war, when the munition makers, instead of working overtime, have to compete with one another for a limited number of jobs. The shortage of employment may not come immediately war ends, for much work, such as building and repairs of all kinds, has been postponed: nevertheless, a period of depression must be expected as soon as this accumulation of work has been exhausted and Europe settles down, as it did after Waterloo, to build up again painfully what it has destroyed.

A further consideration which tells on the side of taxes as against loans is that, in war time, checks to consumption are wise which would be unwise in peace time. One of the simplest checks is taxation, though taxes must be so arranged that they do not press on the very poor. In a war like the present, which has turned wide areas of the territories of our Allies into deserts, non-combatants in this country cannot complain if taxation deprives them of the luxuries—or even of the “unnecessaries”—which they enjoyed two years ago. It is, perhaps, to be regretted that when the large increase of wages was granted to munition and other war workers, no arrangement was made whereby a part of this increase might have been given, as Professor Edgeworth suggests,<sup>1</sup> “by a bonus—whether a lump sum or an annuity—payable after the war, securing (if possible) that the right cannot be converted into present cash.”

#### INTERNAL AND FOREIGN LOANS

It is an interesting problem how far internal loans are preferable to foreign ones. Many people seem to regard an internal loan as a mere transference of money from one pocket to another; it is, they say, “a debt from ourselves to ourselves.” One authority, indeed, has gone so far as to say that: “In spite of the new debt, or perhaps because of it, we may confidently expect that the nation, after the war, will have as much new capital for investment as before.” On the other side, Mr. F. W. Hirst writes to us in order “to direct the attention of the Economic Section of the British Association at the forthcoming meeting to the question whether, after the war, supplies of capital and credit in London will be as abundant as before the war. It is argued, or rather asserted,

<sup>1</sup> *The Cost of War*, p. 27.

persistently in the Press that the nation will be as well off after the war as before; that the money spent on war is circulating wealth and enriching the people; etc., etc. Well-known writers on finance and economics have advanced these propositions, and have even regretted on moral grounds that an operation which kills and maims such multitudes of men, and causes so much human agony, should be the means of promoting, industrial, commercial, and financial prosperity. They say, also, that there will be abundance of capital after the war, and that war expenditure—so long as the money is borrowed from home investors—can have no evil effects. I submit that the whole of this teaching is contrary to reason and common sense, and that Economic Truth in war-time ought to be prescribed as an antidote to these attractive but dishonest and dangerous illusions. Perhaps the two concrete fallacies that most require examination and exposure are—

“1. That there is no difference from the standpoint of labour or capital between productive and unproductive expenditure.

“2. That money borrowed abroad for war purposes constitutes an economic loss; while money borrowed at home for the same purposes will result in no loss, because, after the war, British taxpayers will pay the interest to British lenders.”

A third opinion has been advanced by Professor Bastable, who says that “from the purely financial point of view, the source of a loan (*i.e.*, whether domestic or foreign) is really immaterial.” Interest has to be paid in either case; and, if the loans be raised on similar terms, it will be at an approximately equal rate. There are, however, economic and political considerations which deserve consideration. A considerable part of the domestic loan—it may be that the whole of it—is expended within the country, thus there is a redistribution of wealth, and, as Coleridge puts it, the circumstances resemble “a husband and wife playing cards against each other, where what the one loses, the other gains.”<sup>1</sup> The State thus has the chance of obtaining taxation from the wages and profits earned by the expenditure of the loan. Necessarily this cannot be so when a foreign loan is raised to pay for goods produced abroad. But this is not a complete view of the position, since the import of foreign supplies paid for by the foreign loan may occasion equivalent British exports. If this be so, our Government obtains

<sup>1</sup> *The Friend*, Section I, Essay 7, Ed. 1867, p. 144.

taxation from wages and profits arising out of the producing of these exports. If, on the other hand, the balance is adjusted by export of securities in order to effect a sale, the Government loses the income tax on those securities, and it has debarred itself from collecting tax on the foreign loan. This latter aspect of the situation resolves itself into the loss of tax by the exchange of securities. Also the effect on invisible exports must not be omitted. The political argument during the progress of hostilities is worth noticing. On the principle that where people's money is, there will their sympathy be also: a foreign loan is likely to bind friends amongst neutrals—perhaps with the qualification that the loan should not be quoted at a discreditable discount.

The various ways of borrowing, and the ramifications of modern credit, suggest yet another problem, namely, what are the real limits to the amount which the British Government can borrow. In one sense, considering the proneness of all Governments to extravagance, it is almost with regret that one finds that for purposes of the present war there is no limit likely to be reached in practice. At the same time, there is a most definite theoretical limit. It is to be remembered that a Government obtains a revenue in order to expend it, and the expenditure takes the form of obtaining goods and services. It follows that the limit at once manifests itself in the quantity of goods it can purchase and the services it needs to hire. Though the limit is comparatively remote, still it is not the less existent, since the only goods and services which are of avail in warfare are those which can be supplied at once or at an early date. All available recent information points to the necessity of an unexampled expenditure of explosives in modern war; and, while the demand is indefinitely great, there is a limit to the capacity of supply. This is one of the real limits to Government borrowing. Another, more or less closely bound up with it, is the available supply of men whose services are used in war. War, in all its tragedy, is continually destroying life and resources alike, and it seems almost as if there was a race to ruin as to which of these should first give out. This thought is serious for humanity at large, and more especially for each of the warring nations. As regards ourselves, the command of the sea enables us to supplement the deficiencies of our own production of supplies: so that, while there is a limit to the quantity

of these, we are enabled both by our sea power and by our financial resources, to work much nearer to that limit than are the Central Powers.

### TAXATION

**CONTRIBUTIONS FROM RATEPAYERS.**—It has been suggested to us that the methods of the last half-century should be reversed, and that, instead of grants from the taxpayer to the ratepayer, local authorities should be made to contribute towards the war expenses of the Government. This does not seem to us practical politics. It is not very likely that local authorities will be encouraged to economise by the example of the Government. An increase in rates, for that is what the proposal really means, would fall heavily on those who are already suffering most from the war—people with small fixed incomes, small householders, lodging-house keepers; and there will be more of these in the future (*e.g.*, pensioners, widows, and maimed soldiers). It might, indeed, be possible to reduce grants for education and public health, since many local authorities are even now only too willing to economise on these services, but these are precisely the services which it is desirable on national grounds to encourage.

**LIFE ASSURANCE POLICIES AND INCOME TAX.**—The exemption from income tax of premiums paid for life assurance was introduced by Mr. Gladstone, in 1853, as a method, so Sir T. P. Whittaker told the House of Commons on 12th July, of differentiating between precarious and fixed incomes, for then only persons with insecure incomes used to insure. In recent years, the death duties have caused property owners to insure, in order to have cash available to meet Treasury demands; and other people have taken out policies as an investment. As the income tax rose, this last plan became more and more profitable, until at last some companies laid themselves out to grant short term or “endowment” policies of which the real aim was not life insurance at all, but evasion of income tax. It was clearly time to check the abuse of a privilege; and Mr. McKenna introduced various amendments to the second Finance Bill, which were intended to reduce the concessions made to insured persons, especially among those liable to the higher rates of income tax. As originally drafted, the new clause was aimed at short term

or endowment policies, endowment policies not being exempt unless the policy was for at least twenty years and did not mature until the holder reached the age of 60. This applied to future policies only. To us, this plan seems a reasonable one; but it was changed in the course of debate, and a new principle was adopted, which says that the right to exemption shall be determined by the income of the holder, not by the character of his policy. The exemption does not go beyond 3s. in the £, and the distinction between whole-life policies and endowment-cum-life policies was dropped.

WAR LOANS AND INCOME TAX.—Among the suggestions in our *Questionnaire* which have been anticipated by the Chancellor of the Exchequer are the “special treatment of savings invested in Government loans” and the “readjustment of the concessions granted on life assurance policies.” The first has been carried only a very little way; indeed, many subscribers to the Second War Loan were disagreeably surprised to find their interest warrants of 3rd June paid “less tax” at the rate of 5s. in the £, whereas other dividends were only taxed at about 3s. 6d. in the £. The deduction, of course, was perfectly correct, being based on the rule that Schedule C income is charged at “the rate in force at the time of payment”; and not, like Schedule D income, at the rate in force “during the period through which the same was accruing due.” Seeing that subscribers in July, 1915, could hardly have expected a 5s. income tax, the rigid application of the rule was hardly just or expedient.

The American Loan had been made free of income tax for obvious reasons, but the principle was not admitted in the case of internal loans until the War Savings Certificates were introduced. These are absolutely free from income tax, but no individual may have more than 500; and as the interest is a full 5 per cent. (compound), the real return is considerably higher, especially to a holder liable to income tax at 5s. or more on the rest of his income. The object of this issue, which has been pushed with the whole force of the Government, the Press, and various bodies for the encouragement of thrift, was to attract the shillings of the wage-earner, and to induce saving by making the process both simple and profitable to the saver. Many of these 15s. 6d. certificates will be purchased by, or on behalf of, persons who are not liable

to income tax, and the expense of repayment in such cases would have been out of proportion to the amount of money obtained. Nevertheless, the rate of interest actually paid to more well-to-do holders is so high, that an extension of the tax-free principle cannot be recommended.

There is, perhaps, something to be said for a War Loan carrying a *maximum* rate of income tax: as subscribers would then know that the yield on their subscription was not liable to any future reduction. But our question implies something more than a consideration of convenience or of attractive promises in a *prospectus*; and this is: "Do not subscribers to War Loans deserve some recognition of the service which they render to their country?" Hitherto, it must be confessed, the experience of subscribers to the  $3\frac{1}{2}$  and  $4\frac{1}{2}$  Loans is not such as to attract a crowd at the Bank of England when the Third Loan comes out. If it were recognised that subscribing was a patriotic and useful act, some return might be made by making the income tax on War Loan interest lower than that on other "unearned" income. Or, again, since compulsion is much in the air just now—and since Parliament has compelled young men to risk their lives on the battlefields of France and Flanders,—ought not those who stay at home in safety and comfort to offer a part of their capital? They would not even be asked to risk it, as the security is of the best kind; they would only be asked to surrender the liberty of investment in respect of a part of their capital.

The principle of compulsion, or, at least, of penalties for non-compliance with the Treasury's wishes, has been accepted by Parliament and by the nation in the penal income tax of 2s. in the £ on "dollar securities" which the Treasury desires to purchase. Yet this was to apply a penalty to persons who had committed no offence; on the contrary, their possession of securities saleable in the United States was admittedly useful to the country. In order to secure subscriptions to a War Loan, a less drastic measure would suffice. First, Parliament might prescribe what portion of a man's total capital, or proportion of his income, ought to be invested in War Loans; the proportion being graduated on the income tax principle. Then supposing that the scale required a man with a capital of £20,000 or an income of £2,000 to hold £2,000 of War Loan, he might be told, "if you subscribe your

quota, you need only pay 4s. in the £ on the interest; but if you refuse to subscribe, you must pay an extra income tax of £20 a year." Conscientious objectors to war loans could very easily prove their sincerity by foregoing the privilege and paying the penalty. A simpler plan would be to allow that portion of a man's income which was derived from war loans to pay income tax at a lower rate than the rest of his "unearned" income; or the interest from war loans might be omitted from the total income which decides the rate he must pay (e.g., an income of £1,500 a year, with £90 coming from the 1915 Loan, would be treated as £1,460, and pay 4s. instead of 4s. 6d.). This last plan suffers from the fact that it would only benefit taxpayers whose income happened to be slightly above one of the income tax "steps." However, if the principle of special treatment be accepted, and if the theoretical objection to it be overcome, the application presents no difficulty.

One consideration in favour of paying for the war by taxation (so far as possible) rather than by borrowing has been put very forcibly by Professor Pigou in his *Economy and Finance of the War* (pp. 68-80). Assuming, as he does, that the amount which the Government can take from the poor is relatively small, it follows that the rest of the huge war expenditure must "be raised somehow from better-to-do people." Therefore, the only choice is how far the contribution of the rich should be made in the form of loans and how far in the form of taxation. "Under the tax method," Professor Pigou says, "the rich and moderately rich really shoulder the whole burden of the charge that is laid upon them; under the loan method, they do not do this, because they are compensated afterwards through taxes laid partly on themselves, but partly also on other and poorer sections of the community." There is much force in this argument, but it seems to us highly undesirable that the working classes should be encouraged to think that taxation involved in war will not fall upon themselves, and that the sudden demand for young men to serve in the Army will provide those who stay at home with ample employment at higher wages. It is, of course, the older and married men whose votes and political influence count, while it is the young and voteless men who have to fight. There has been too much talk of "war bonus" and increased earnings, as

if the war was a cake to be shared rather than a burden to be borne.

Among all the other belligerent nations, every class—except the German landowners, who profit by the enormous price of food—feels the effect of the war through loss of income and real privations. In Great Britain, comparatively few people are feeling the want of necessaries, and a great many are handling more money than they had ever expected to earn.

If the exposure, the wounds or sickness, and the risk of death cannot be shared by non-combatants in these islands, the least one can do is to make real sacrifices of income by paying war taxes, for that is the only kind of “national service” which can be universal.

#### CONTINUOUS DAY-BY-DAY BORROWING

BY D. DRUMMOND FRASER, M.Com.

In the Appendix to the report on “The Effect of the War on Credit, Currency, and Finance,” presented by the Economic Section at the Manchester meeting, in 1915, I asked the question: “Is another War Loan necessary?” I suggested that the Government should adopt the banking principle of continuous day-by-day borrowing direct from the people. Since then this system has superseded the long-dated spectacular loans on the Consol principle. In order to show this, I give below—quarter by quarter—the expenditure, the revenue, and the amount of the home debt created.

Immediately after the outbreak of war, the expenditure was financed from time to time by the sale of Treasury Bills in limited amounts by public tender and by a large advance from the Bank of England. The Treasury Bills were over applied for; and, on the flotation of the first long-dated War Loan on 17th November, 1914, the outstanding amount was, in round figures, £90,000,000.

On 13th April, 1915, the Bank of England for the first time sold Treasury Bills day by day over the counter without limit, at rates of discount publicly announced. The outstanding amount of Treasury Bills had reached £240,000,000 when on 21st June, 1915, the second long-dated War Loan was launched.

Economic experts are forcibly of opinion that the long-dated loans, involving large subscriptions from the banks—the people’s

money once removed—and the large advance from the Bank of England—the people's money twice removed—created an inflation of bank credit which stimulated the upward trend in the rise of prices. These experts must admit that the converse, also, is true. The people's money, diverted, through continuous day-by-day borrowing from their current war savings to the Government, by reducing its purchasing power for goods and services, checks the upward trend in the rise of prices. A striking proof of this is afforded by the index number of wholesale prices for June, as given by both the *Economist* and the *Statist*. This shows not only a check in the upward movement of prices, but, for the first time, a decided decline since the beginning of the war.

A further proof is found in the remarkable fluctuations in the rate of interest prevailing during the period of the long-dated spectacular loans as against the steadier rate during the period of continuous day-by-day borrowing. (*See Chart.*)

Continuous day-by-day borrowing has a reflex action; it increases the power of the Government to purchase goods and services; it decreases the power of the people to purchase goods and services. The inwardness of continuous day-by-day borrowing consists in its unlimited revolving credit, the unerring safety-valve of which is the rate of interest.

Immediately after the beginning of the war, widespread unemployment was feared. The Government sympathised with the cry "business as usual": and each person encouraged the other to spend as much as usual. Now (I am writing in the War Savings Week, 16th–22nd July) it has been realised that the colossal daily expenditure of the Government makes it essential that each individual shall altruistically encourage his neighbour to cut down all unnecessary personal expenditure, in order to invest in British War Investments.

A simpler form of Exchequer Bond, repayable in three, five, seven, and ten years, without irritating restrictions, would draw every man, woman, and child in the United Kingdom into its net.

The undoubted success of continuous day-by-day borrowing has revolutionised the Government's methods to stimulate investors. In fact, one may go so far as to say that in the grinding methodical pressure of continuous day-by-day borrowing we have a more potent factor than in the sudden firework display of a spectacular

long-dated loan. The daily character of the borrowing followed by prompt Government disbursements, enables the monetary machine to work with the utmost smoothness. (*See Chart.*)

I believe the slowness of the people in assimilating the spirit of war savings was due to the slowness of the Government in providing a money-box in the shape of a popular investment to suit every kind of pocket, and in advertising this in the public Press. This lack has, for the last few months, been supplied by the National War Savings Committee, whose primary duty is the propaganda work in connection with the formation of War Savings' Associations all over the country.

The following War Investments could not be obtained day by day over the counter until—

		Amount Subscribed until 4th August.
Dec. 16, 1915	5-year 5% Exchequer Bonds	£ 281,000,000
Jan. 4, 1916	Post Office issue Exchequer Bonds	28,00,000
Feb. 21, 1916	War Saving Certificates	21,000,000
May 27, 1916	3-year 5% Exchequer Bonds	30,000,000
June 2, 1916	War Expenditure Certificates	18,000,000

This is equal to over £800,000,000 a year.

The adoption of the banking principle of the mobilisation of securities (*i.e.*, the sale and loan of dollar securities by the people to the Government) has liquidated the foreign trade balance against us, the payment of Government purchases from abroad for war equipment, and has provided the funds for the Government war loans to our Allies and Dominions without any appreciable effect on our stock of gold. And these exchanges of securities will not only add to the popularity of British home investments, but will give a national, non-wasting asset of no mean importance after the war. These, plus our revenue, represent nearly one-half of the current year's expenditure. The balance of £1,000,000,000 ought to be raised by a simpler form of Exchequer bonds, repayable in three, five, seven, and ten years.

The fact that Exchequer bonds, war saving certificates, and war expenditure certificates have been sold over the counter day by day at the rate of £800,000,000 per annum, notwithstanding the attractiveness of Treasury Bills, is a convincing proof—if proof were needed—of the dogged determination of the British people to find the necessary money. The people are ready.

They only need to be assured that they can get their money back without loss. What is needed is the concentration of all the methods which Mr. McKenna has courageously instituted during the last few months. A bond should be obtainable at any of the 15,000 branches of the Post Office with the same ease as a postal order. A bond should be obtainable at any of the 9,000 branches of our banks with the same ease as a Bank of England note. The interest on the bonds should be 4 per cent. *free of income tax* (War Saving Certificates). The bonds should be transferable by endorsement on the back (War Expenditure Certificates). The bonds should be repayable on the third, fifth, seventh, and tenth anniversary (War Saving and War Expenditure Certificates). The introduction of the seventh and tenth year would appeal to a much larger number of investors than the present term of three and five years. There should be an option for the bonds to be payable by instalments (War Saving Certificates). Pass books should be issued for registered bonds (Post Office Issue Exchequer Bonds). The holders of the 4½ per cent. War Loan should have the option of transfer to the bonds (a conditional privilege already granted to bankers).

I can look into the future after the war and I can see the gradual redemption of the greater part of the outstanding Treasury Bills by the funding of Government war loans to our Allies and Dominions. I can see the British people eagerly seizing the opportunity of bringing in their Exchequer Bonds to be funded (and repaid by annual drawings by ballot) into a great National Victory Loan.

**EXPENDITURE, REVENUE, AND HOME DEBT CREATED QUARTER BY QUARTER**  
*(From the Treasury quarterly return)*

In millions of pounds.	1914.			1915.			1916.			Total for two years.		
	S. pt.	Dec.	Mar.	June.	Sept.	Dec.	Mar.	June.	July	(month)	Spec. loan Period. <sup>1</sup>	Continu- ous day-by-day Period. <sup>2</sup>
Expenditure	£87	£186	£240	£258	£416	£426	£460	£444	£182	£1,187	£1,512	£2,695
Less Revenue	36	43	107	51	51	64	169	73	32	287	338	25
<b>Home Debt created—</b>												
3½% War Loan	51	143	133	207	365	362	291	371	150	900	1,174	2,074
4½% War Loan	—	—	102	194	35	—	—	—	—	331	—	33
Treasury Bills	443	442	Dr. 21	173	3	142	171	196	94	240	603	843
4 3/4% Exchequer Bonds	—	—	48	Dr. 16	—	—	—	—	—	32	—	32
5½% Exchequer Bonds	—	—	—	—	—	18	136	122	38	—	314	314
War Expenditure Certificates	—	—	—	—	—	—	—	10	8	—	18	18
Other Debt created under War Loan Act, 1915 (including War Savings Certificates)	—	—	—	—	—	—	—	10	14	11	—	35
	43	144	221	192	531	218	323	342	151	1,131	1,034	2,165

The total Treasury Bills issued exceed £1,300,000,000. It is well known that the major portion of the outstanding Treasury Bills are held by investors for investment purposes.

The average rate paid by the Government for the total amount borrowed during the two years works out almost exactly to 4½ per cent.

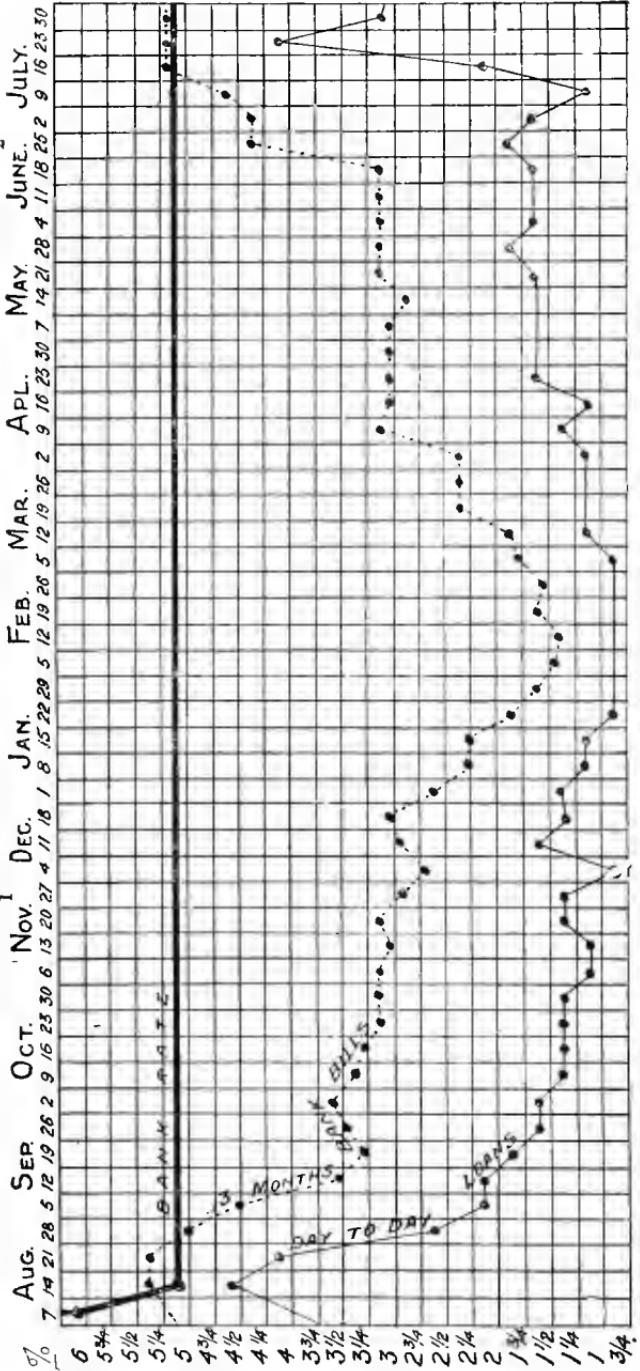
<sup>1</sup> Spectacular loan period: September, 1914—September, 1915.

<sup>2</sup> Continuous day-by-day borrowing period, December, 1915—July, 1916.

*\* Offered by Public Tender.*

SPECTACULAR LOANS PERIOD AUGUST, 1914—NOV., 1915.

1914.



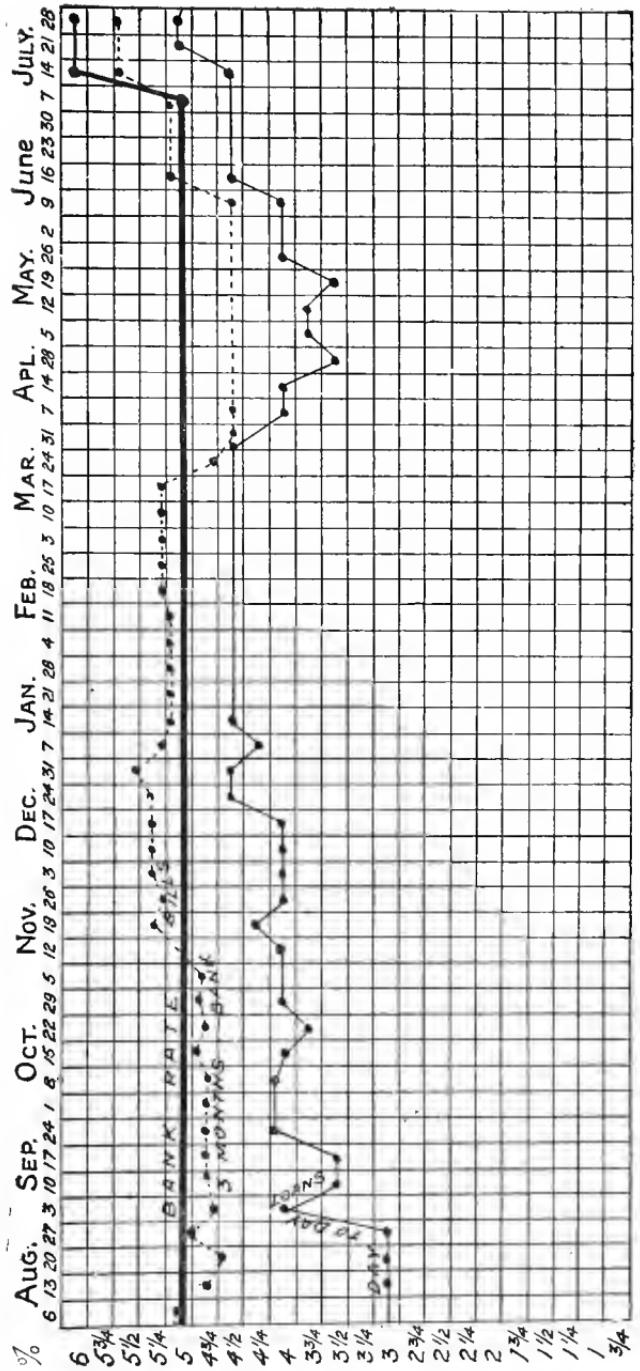
<sup>1</sup> 1st War Loan.

<sup>2</sup> 2nd War Loan.

CONTINUOUS DAY-BY-DAY PERIOD, NOV., 1915—JULY, 1916.

1915.

1916.



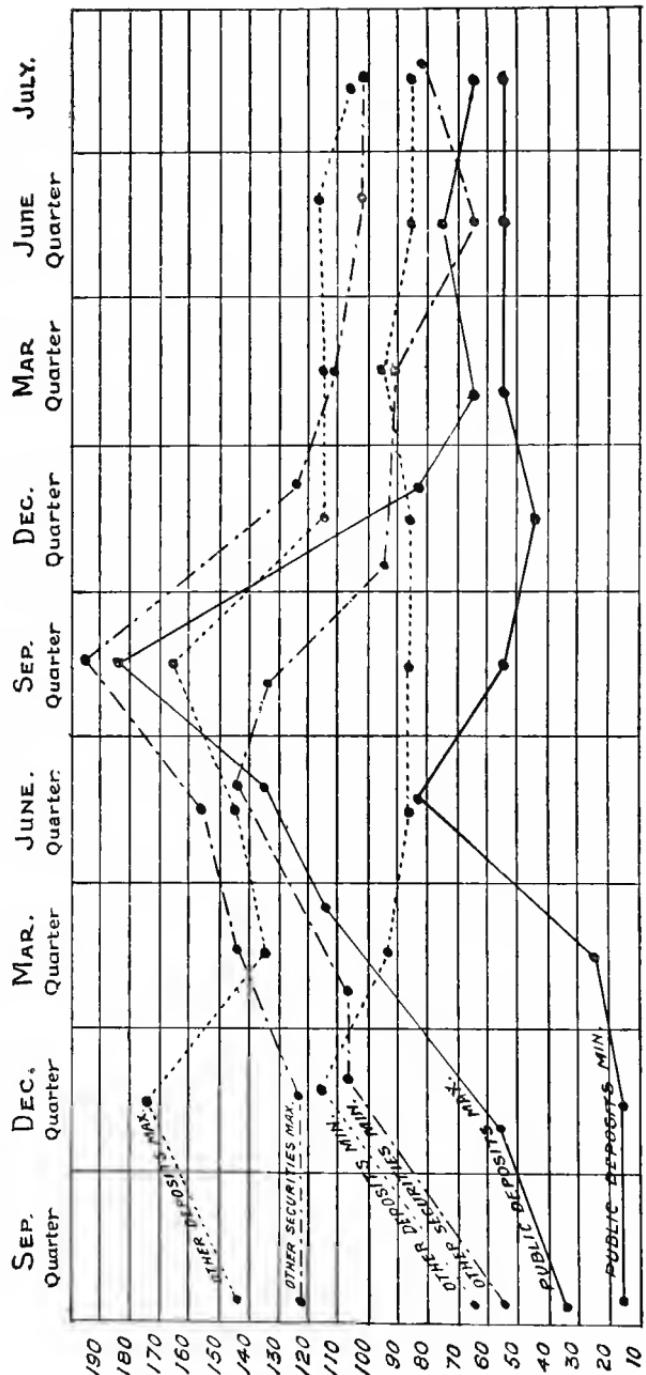
D. Drummond Fraser,  
Augt 4th 1916.

The drop here is due to Revenue collections.

# BANK OF ENGLAND.

Maximum & Minimum Weekly Figures in Millions of Pounds.

1914. 1915 1916.



D. Drummond Fraser,  
Aug 4th 1916.

CHAPTER V  
LAND SETTLEMENT  
BY MR. CHRISTOPHER TURNOR

LAND SETTLEMENT, at first sight, seems a simple term describing a simple process: to place on the land suitable men with the object of enabling them to earn their living by their work upon the land. But if we come to view the process at close quarters, we find that it is bound up with a large group of economic, social, and moral factors affecting national welfare and Imperial consolidation to a degree in which it is affected by no other branch of national development.

In proving this thesis, I propose to show—

- (1) The progress which we have made in this country towards a more rational system of land settlement;
- (2) The gradual growth in other countries of a great land policy based upon scientific principles; and
- (3) The use we may make of this rational system of citizen-making and nation-making for solving the great problems with which we are confronted.

I

Since this Section met last year, the Departmental Committee appointed to consider the settlement and employment on the land of discharged sailors and soldiers have issued a report on each subject; and I will not pretend to be anything but highly gratified at seeing that the Report on Settlement embodies all but one of the principles which I stated before you last year to be essential features of successful land settlement.

This one essential feature which the Committee, on their part, assume *not* to be essential is that of ownership. Indeed, they frankly declare against ownership, and substitute for it the principle of tenancy. They give us many reasons for their choice, but omit the most powerful reason of all against such choice: that of universal experience. Wherever we study the science and practice of successful settlement, ownership is invariably one of the fundamental principles deliberately adopted. Denmark provides quite

a striking illustration of this point. Two generations ago the percentage of the owners and tenants of Danish soil was as 12 to 88—exactly as it is with us this day. But the Danish people set themselves the task of redressing what they perceived to be a wrong principle; and to-day, as the result of a wisely conceived land policy, the proportion is exactly reversed: 88 owners to 12 tenants. In several of our Dominions we can observe a similar process: their respective Governments at first adopted the principle of tenancy (leasehold), but very soon substituted for it the principle of ownership.

In stating this fact, I am by no means intending to say that successful colonisation is not possible under a system of tenancy *if* all the other fundamental principles of settlement are observed: I merely wish to record that, so far as I am aware, there is no evidence available which either proves or disproves this theory; but that the evidence in favour of the principle of ownership is overwhelming.

Indeed, the very failure of small ownership in this country is a proof of the general principle. For what happened? A hundred years ago, Arthur Young told us that ownership had the magic power of turning sand into gold. What he ought to have said is that ownership is *one* of the essential features in a process which turns “sand into gold” (*i.e.*, renders under-productive land highly productive). But in that case we should have got a simple scientific statement instead of a dazzling phrase, in which even to-day about one-half of the nation can see nothing but good and the other nothing but bad. Indeed, the idea of tenure became with us an obsession. All reform was looked at from the point of view of tenure; and we have ever since acted as if a part were more important than the whole.

About the time that Young coined his phrase, Davy laid the foundation of the great Law of the Minimum in Plant Production. In its completed modern form it states that there can be no growth until all the factors of growth are present; and that the quality and quantity of growth is determined by that factor of which the smallest amount is available. For though there may be enough sunshine, and water, and mineral salts to make an 8-quarter crop of wheat—if there is only enough nitrogen in the soil for making a 4-quarter crop, a 4-quarter crop is all we shall get.

But there is a similar Law of the Minimum which governs the science of land settlement. Where all the factors of successful settlement are present, there the undertaking is successful; where, on the other hand, some of the factors are absent—or even only one—we are courting certain failure.

As was to be expected, the publication of the "Settlement" Report created a good deal of criticism, mostly, however, of a noisy rather than a sound character. I would, first of all, call your attention to the curious want of logic which directs it, as it were, to the wrong address: the critics are attacking Land Settlement when they really mean our existing method of providing small holdings—which is as much like Land Settlement as haphazard effort is like rational action. For what does the Land Settlement Report in effect tell us?

Having observed that under the *old* order of *laissez-faire* small holdings have not always been as successful as they might have been under a more favourable set of circumstances, the members of the Committee advise that we should deliberately create these favourable conditions here, as they were created in other countries. And the Committee further describe the means by which such favourable conditions can be created.

But what is the reply of the critics? We assert, they say, though we do not prove it, that under the existing order of things small holdings are a failure. You, the Departmental Committee, aim at creating a new order of things. Therefore, we assert, though we do not prove it, that under your new order of things, small holdings will still be a failure.—Q.E.D.

One of the chief objections to the further extension of the system of small holdings raised by these critics is that the life of the small holder is very hard. At the best, we are told, it is an existence of ceaseless drudgery performed for a mere pittance. The pathetic description would impress one more if it did not invariably come from persons whose motives cannot be regarded as disinterested, seeing that the critics are farmers, or the spokesmen of the farmers or landowners. Of course, there is no doubt that the small holders' struggle for success might be made much easier. As I pointed out last year, the result of our amateurish treatment of a scientific process is that our small farmers have to bear burdens which a rational treatment in other countries has long ago lifted from the

shoulders of their small farmers; and it is this very feeling of injustice to our own people and the recognition of the duty to lighten their burdens which has inspired the Committee Report and given us the first instalment, as I hope it to be, of a national land policy—perhaps even of an Imperial policy. But when all is said and done, there remains the fact that our 291,000 small holders seem to be uncommonly fond of the life. Moreover, as the demand for small holdings was far from satisfied at the beginning of the war, it seems as if thousands of other men were exceedingly anxious to share a life, the hardships of which they were implored by leaders and farming papers not to undergo.

The other chief argument is that “the small holdings movement is already overdone.” Now, it is quite true that there are almost twice as many small holders<sup>1</sup> as farmers. The Board of Agriculture Statistics tell us that in England and Wales there are 291,000 small holders and 143,000 farmers: in the proportion of two to one. But these Statistics tell us something else: that the 14,000 large farmers, that is, men holding over 300 acres, hold 2,500,000 acres *more* than all the 291,000 small holders put together. We are, therefore, neither entitled to say that the Small Holdings Movement is “overdone,” nor to deny that there appears to be room for a very considerable increase in the number of small holdings.

But before we can reasonably take steps to extend the existing area under small holdings, we must, first of all, give up pretending that our amateurish method of “providing small holdings,” as it is called, can take the place of a rational system of land settlement any more than gambling can take the place of sound business. Indeed, one of our first tasks should be to create more favourable conditions for the existing 291,000 small holders, and make them more economic units than most of them are under the existing unfavourable conditions.

The plea for a rational and comprehensive land policy was advanced a stage further in the Minority Report of the Committee, which deals with the employment on the land of ex-Service men; and the reception which this courageous document has met with in the Press indicates the profound interest which the subject is arousing in the minds of the people. There seems to be a fairly general

<sup>1</sup> A small holder is a man who holds 50 acres or under.

determination to have done with the old shibboleths. Even suggestions of a minimum wage for farm labourers, a minimum price for wheat, and the prospect of permanently dearer food, no longer raise passions to fever heat; but one observes rather a disposition to examine every suggestion in order to understand its bearings upon other suggestions and upon the main problem, which is: "How to give the country a sure food supply; and how most quickly to make good the losses in human and material wealth caused by the war."

It is now notorious that a mere three months' supply of our daily food stands between us and absolute irretrievable defeat. A three months' shortage in the supply of ammunition or even total stoppage for that time would mean temporary withdrawal and a terrible loss of lives, as in the case of Russia last year; but, however serious its temporary results, we may be sure that it would not affect the ultimate outcome of this war, having regard to our almost unlimited latent resources in raw material and manpower. But a serious interference with our food ships could hardly fail to bring about conditions which would culminate in an unfavourable peace. The first problem, therefore, is: "How to increase our home production of food to the point at which this risk becomes eliminated."

The second part of the problem is to devise means for making good the losses caused by the war in human material and wealth, and making them good in the best and quickest possible way. Here the scope of the problem extends beyond the national, and becomes Imperial: for it is not to be assumed that, having formed an organic union, as Mr. Asquith described it at Ladybank, for tackling the problems of war, we would allow it to go to pieces again when the war is over, and let each partner in the Empire deal with his own share of Imperial problems on sectional lines. As far as we are concerned, I feel that we must definitely abandon the senior partner attitude, and be content in future to be *primus inter pares*. We must cease to view the Empire from the point of view of England, and begin to view England and all the other parts, from the point of view of the Empire.

It is characteristic of our attitude towards the great problem of the moment and the future that, since the 4th of August, 1914, the Government has appointed no less than 105 Committees to

investigate one or other of the major or minor problems and recommend a solution. In addition, there are scores of more or less powerful societies, all working at the solution of some problem which seems to them the most important. The result is that, while there is a perfect welter of well-meant but mostly ill-conceived and mutually conflicting suggestions, there has not so far emerged anything even approaching a National Policy which will, in Lord Milner's definition, "take account of all the great needs of our life—internal and external—and propound an orderly and coherent plan for dealing with them as a whole."

Political philosophy is an intellectual pursuit which is held in this country in little esteem. If it were not so, we should have learned long ago that there is a *nexus* between all our problems (social, political, moral—both national and Imperial); and that, indeed, there are whole sets of problems which, under a system of rational Government, could be made to solve each other. In the absence of analytical and synthetic thought, we deal with problems "as they come." If, for instance, there is distress among the poor, we collect money for soup kitchens, clothes, or coal. If the distress is too widespread for private charity to deal with, we use the rates for starting relief works, such as setting one squad of men to dig a hole and another to fill it up again. If the scope of the distress is national, we set up a Royal Commission to dig a hole in which to bury itself and the subject.

In Education, we seem to think it the very perfection of wisdom to spend huge sums on the elementary education of our boys and girls up to 13 or 14, that is, the beginning of the most critical stage in their life, and then treat them almost as if the future fathers and mothers of the race were not the slightest concern of the State. Knowing as a nation nothing of the vital importance of a strong agricultural population, we take no means to improve the social and economic conditions in the villages, but, on the contrary, permit a system of education which tends to educate the village children away from the land. And so through every section of our national life. We know that our Dominions are crying out for settlers—and we know, indeed, that the consolidation of the Empire is a life-and-death matter for us here at home—yet we let hundreds of thousands of the best of our brain and brawn go to foreign countries and be lost to us for ever.

## II

What has been the attitude in other countries towards these questions of vital economy? Here are a few salient points: Germany has an agricultural population of 20,000,000. "The war" (Lord Selborne told us some time ago at Lincoln) "is not only being fought by Germany on her organisation as a military power: it has been deliberately fought by Germany on an agricultural organisation. If Germany had made no more progress in agriculture in the last twenty years than we have here in England, she would have been on her knees suing for peace twelve months ago."

Her power of resistance is directly traceable to her land policy. Her successes in the wars of 1864, 1866, and 1870-71 led her to dream about a world empire which should replace our own. For this purpose, the rulers of Germany went into partnership with science, commerce, and the people themselves. Everything was subordinated to the one great purpose of breeding the greatest possible number of fighters, providing adequate opportunities of employment, making Germany independent of foreign food supplies, and organising her warlike production as highly as careful planning and methodical action could make it.

So we see Germany undertake great schemes of reclamation and afforestation. Moors, swamps, heaths, and drift sand are converted into prosperous villages and settlements. She neither regards small holdings as a panacea, nor does she pin her faith to the large industrialised farm as a sovereign remedy; but uses both side by side, with all the other means in the harmonious development of all her natural resources. Forestry becomes a science which changes the physical conditions of entire districts, makes enormous addition to the country's wealth, and provides (in the process) employment for thousands of workers. The total result of her action is that, on an area which is only three-fifths larger than ours (80,000,000 acres), she produces three times as much as we do on our 50,000,000 acres.<sup>1</sup>

Denmark, we know, three generations ago was wretchedly poor. Then, in a war with Prussia and Austria, she was almost mortally wounded by being robbed of half her territory. To-day she is the

<sup>1</sup> See *Recent Development of German Agriculture*. T. H. Middleton, C.B. Cd. 8305. Price 4d.

second richest country in Europe, counting wealth per head; and her system of education and her organisation of food production are a model to all the world. What has performed this miracle? Scientific methods of development adapted and applied to the special needs of Denmark.

Belgium some fifty years ago discovered that a rational land policy would help her in eliminating the evils arising from an excessive development of her urban industries. She did, therefore, very much what other countries were doing; she began to subdivide the available land, reclaimed morasses and dunes, and built up a remarkably efficient system of agricultural instruction. In the sub-division of land, I am inclined to believe that Belgium has gone a little too far. In spite of that mistake, she has succeeded in raising the average yield per acre until it has reached an amount five times as high as our own average. Some of this was grown on land which three generations ago was morass or shifting sand. Above all, she has succeeded in building up a population which, to use a pithy phrase, appeared "to get more out of life" than the corresponding classes in richer England.

### III

We saw that the problems which we have to solve are: How to give the country a sure food supply; and how quickest to make good the losses in human and material wealth caused by the war. We saw, further, that the scope of this twofold problem is Imperial, and that in order to solve it we must formulate a policy which will take into account all the great needs of our life, and propound an orderly and coherent plan for dealing with them as a whole. What use in this respect can we make of the experience of other countries?

The essence of every rational land policy is the acceptance of four great rights of the individual: the rights of access to the land, to credit, to markets properly organised, and to the best technical advice available on any subject in the production of food and raw materials from the land. The social instruments employed for using these rights are organisation and co-operation. The object of using them is the attaining of the fullest measures of national welfare, through attaining the fullest measures of individual well-being. Hence we see State-aid allying itself with self-help and

mutual aid; and smoothing the path of development whenever necessary by the quick and sharp action of Legislation.

The foundation is the right of access to the LAND. Every man willing and able to earn his living by work on the land must be granted facilities for exercising it. If he choose to work for a wage, the State must see to it by means of Wages Boards that his wage is good enough to provide such conditions as will keep him and his family in a state of efficiency. If he prefer to work for himself, the State, through a Land Settlement Department, must place him where he is likely to use his particular knowledge to the best advantage. Under intelligent direction, our industry of food production will develop in two main directions: along the lines of quantitative efficiency towards the 5,000-acre farms, run on factory lines, with adequate capital, skilled workers, and under highly technical managers and heads of departments; and along the lines of qualitative efficiency towards the large colonies of small holdings, organised for production, distribution, and the provision of credit as highly as our combined intelligence will let us. Between these two extremes will come the whole range of farms of varying size as at present. We have in each county a few star farmers, who are, in their own spheres, probably the finest cultivators of land in the world. Our object must be to raise the standard of the average farmer: hence the need for all that official and unofficial organisation can do.

A most important branch of every land policy is the reclamation of land at present under-productive (moors, swamps, heathlands, dunes). The work of reclaiming must be entrusted to a Reclamation Department. The advantage of reclaimed land is that it provides accommodation for settlers, and entails no disturbance of sitting tenants. It is greatly to be regretted that the Government has not employed thousands of German prisoners on reclamation work. It has been urged to do so; and if it had followed the advice given, we might well have 50,000 acres to-day ready for new settlers. Land which it would cost too much to reclaim for farm and market gardens is afforested. This task must be placed in the hands of a Forestry Department; and the work will give healthy employment for thousands of workers, both in afforestation and forest small holdings, and in all those industries for which the forests supply the raw material.

Timber is an essential of modern warfare. In view of the great inroads which the present war has made upon our home supply, afforestation assumes, therefore, a special importance.

Reclamation and afforestation will provide permanent employment for thousands of families. If, further, we organise our industry of food production on the principles which are operating abroad, we may hope to bring back to it gradually the million workers who have left the countryside during the last sixty years.

It may be that we shall have to secure to farmers a minimum price for wheat. Or the State may have to become purchaser of some of the staple articles of food, and by either of these means acquire the right to set a standard of production, fixed according to the soil and district. Or the State, in consideration of providing access to credit, markets, and technical advice, may, in the interests of the nation, order farmers to adopt certain methods of cultivation and cropping. Or, finally, the process of a gradual but steady raising in our average yield may flow naturally—as it did in Denmark—from the co-operation between State, nation, landowner, farmer, and labourer. But it must be remembered that this operation takes a long time to develop; and we are beginning so late in the day, that we may not have time for it.

**CREDIT** is the life-blood of Agriculture, as it is of every other industry and business. We need land banks and credit banks. A *sine qua non* of land banks is an act for making the transfer of land as simple and cheap as, say, the transfer of shares.

We must learn to regard associated honesty as a satisfactory security. The natural tendency of credit granted under an intelligent system is to convert itself into capital in the quickest possible way. In this respect it differs from ordinary borrowing, which is merely contracting a debt. A debt is an extra burden—in the majority of cases of a more or less permanent character. A loan granted by a land bank for the purchase of land (long term credit), or by a credit bank for a productive purpose (short term credit), does not merely enable us to obtain the object we desire, but in due course extinguishes itself.

A loan of £30 for a cow will enable me to supply milk for which there is a profitable demand; but part of the payments which I receive for the milk will, under this credit system, go to extinguish

the loan, so that at the end of a certain period £30 of credit has become £30 of capital.

The fundamental principle of agricultural credit is the principle of association. In short term credit, it is not only accepted as security, but is also used in quite a remarkable manner for increasing the efficiency of the borrower both in production and distribution, and so reducing all risks of loss to a minimum.

To give an example from the dairy industry : In connection with the credit society there is formed a trading society for buying and selling. If the loan is wanted for the purchase of a cow, the borrower is required to insure the cow with the local cow insurance club. The cow insurance clubs lead to cow-testing societies, and these to the establishment of breeding centres, at which pedigree bulls are kept to improve the milk yield of the district. The next step is the co-operative creamery, which does the work of a hundred dairy farmers better than they could ever hope to do it themselves; obtains for them a better return for their produce; and by relieving them of the necessity to search for a market, leaves them free to give their undivided attention to the business of production. We can observe a similar development in the pork and bacon industry.

Again, loans for high quality seeds and fertilisers enable the holder to improve his cropping, and lead on to the formation of implement hire societies; co-operative spraying of potatoes, charlock, and fruit; the purchase of travelling fruit-drying plants; and the establishment of fruit preserving and jam and pickle works. Finally, taking into account both the economic and social value of outside employment during the winter, a rational credit system promotes the establishment of village industries suitable to the condition of the district, as, for example, basket-making.

The right of access to our own markets demand that the markets must be freed. This and the question of transport will have to be dealt with by legislation. Railways and canals will have to be taken over by the State. Our carrying rates for agricultural produce are the highest in the world. A rational land policy provides for preferential rates. The War Office motor lorries at the end of the war should enable us to organise a great national service of collection and distribution. A close alliance with the Industrial Co-operative Movement of the town is imperative: it has a

membership of 3,000,000; a turnover of £166,000,000; and, above all, an experience in distribution which is invaluable. The great number of unnecessary middlemen will disappear in proportion as distribution is being reconstructed on a scientific basis.

The right of access to the best information cannot be considered apart from the whole question of Education. Here the principle of *laisser-faire* is rampant. The neglect of science is a grave scandal, fraught with disaster. Technical instruction is a *cul-de-sac*. We teach applied science, but provide little opportunities for applying it. In agricultural instruction, the man who is most in need of it does not get it.

Taking for our motto: "Human happiness, social efficiency, Imperial stability," we must first of all stop the appalling loss in social efficiency which now results from the State spending enormous sums on the education of the future citizen up to the age of 13 or 14, and then losing touch with the great majority of them, so that much is lost of what has been so costly to give. It will therefore make attendance at continuation schools compulsory up to the age of 18. Further, manual instruction will become part of the curriculum in all schools. While the boys would be chiefly instructed in handiwork and the girls in home-craft, the boys should yet learn to cook a simple dinner and the girls to put up a shelf or mend a broken chair, if need arose. Further, in the country there would be centralised continuation day schools and a new type of farm school; the science teaching in secondary schools in agricultural districts should be placed on a "land basis"; and there should be a sufficient number of scholarships to enable the capable boy and girl to pass from the village school, through all the intermediate stages, to the University. Agricultural instruction should be brought to the door of the farmers.

The State must become the controlling partner in the subsidiary industries, which will be the logical outcome of a rational development of our resources in land, man-power, and intelligence. Sugar-beet and the potato are—one for heavy, the other for light, soils— instruments for raising the producing capacity of the soils. They not only cost us nothing to use, but actually yield a profit, provided, of course, that we use them for the manufacture of sugar and potato starch. For, in that case, we only use the carbon,

hydrogen, oxygen, from the atmosphere, where they are present in inexhaustible quantities; while the mineral salts from the limited store in the soil are taken back to the land in the manure of the stock fed upon the waste products of these industries.

The possibilities for scientific research and scientific management in the production of raw materials from the air, and their profitable conversion into articles of commerce, are, indeed, enormous. Before the war, we bought £20,000,000 worth of sugar from the Continent.

The scope in the potato industry is greater still; and the possibilities which will be within our reach when, under the guidance of a rational land policy, the State becomes the controlling partner in the potato industry, will satisfy the most ambitious student in research and applied science.

To sum up—

- I. To increase our output of food, we must:
  - (1) Raise the standard of cultivation of all our average farmers.
  - (2) Guarantee a remunerative price for home-grown food, and check as far as possible great fluctuation in prices.
  - (3) Improve our marketing conditions by organisation—official and unofficial.
  - (4) Lay it down that it is essential to the safety and welfare of the country that certain definite quantities of the chief articles of food must be produced at home.

- II. To increase our agricultural population we must :
    - (1) Secure to the labourer a reasonable living wage.
    - (2) Provide a sufficient supply of good cottages, and make village life more attractive.
    - (3) Devise a comprehensive scheme of scientific land settlement.

The small holdings should be placed (*a*) on reclaimed land (there are hundreds of thousand acres of land that could be reclaimed); (*b*) on land bought in the open market or acquired when existing tenants give up their farms; (*c*) on land taken from excessively large farms; and (*d*) on land situated near new plantation, so that the new settler would be provided with a dual occupation as forester and cultivator.

- (4) Create an adequate Land Settlement Board, which should control all settlement in the United Kingdom.

The conditions surrounding our twofold problem are such that nothing but energetic action by the Government will enable us to solve it: indeed, such action must come before the end of the war, if it is to be of real avail.

There is the ever-present fear that the Government, after the manner of Governments, will sit still and do nothing. And might one ask, in conclusion: Is there, under our present Constitution, any hope of a rational policy which will adopt and carry out measures having for its object the welfare of the nation and the Empire? There is a general feeling that we must get rid of the baneful influence of party politics; and there is a desire quite commonly expressed for a National Party. But I ask in all seriousness: "Will this be sufficient? Has not the time come for a serious modification of our Constitution?" The development and consolidation of the Empire is a matter of the gravest importance, but Imperial problems will only be solved by an Imperial Parliament. The rational development of the United Kingdom is a problem of equal gravity; but the great economic and social problems before us can only be solved by a National Parliament which may devote itself to their solution unimpeded by the consideration of foreign and Imperial politics.

At present, our Legislature has more subjects to deal with in one Chamber than it is possible for the mind of man to assimilate. Our legislators are asked to compass too much; the result is that little is done well and many things not done at all.

In politics, we have still to learn the fundamental differences between the splitting of forces and division of labour. We still believe in the former; Canada and Australia in the latter. Is it not time that we learned a lesson from them and used their principle of Federal and State Parliaments as a model for reconstructing our own Legislature?

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